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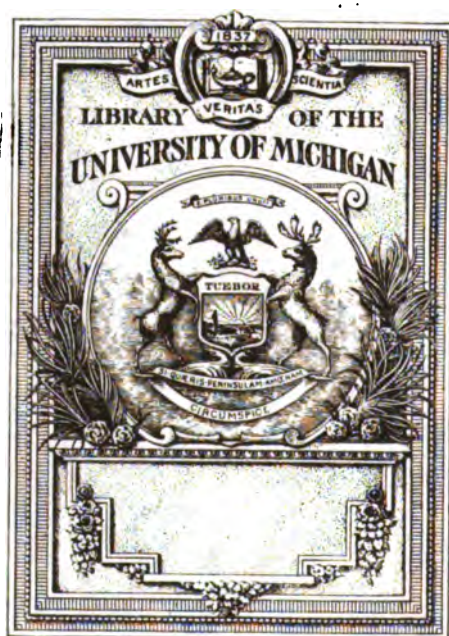
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TWENTY-EIGHTH ANNUAL REPORT

OF THE

State Board of Health

OF INDIANA

FOR THE

Fiscal and Board Year ending September 30, 1909

Statistical Year ending December 31, 1909

TO THE GOVERNOR

INDIANAPOLIS:

WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING

1910

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1910

THE STATE OF INDIANA.

EXECUTIVE DEPARTMENT,

November 30, 1909.

Received by the Governor, examined and referred to the Auditor of State for verification of the financial statement.

OFFICE OF AUDITOR OF STATE,

INDIANAPOLIS, December 10, 1909.

The within report, so far as the same relates to moneys drawn from the State Treasury, has been examined and found correct.

JOHN C. BILLHEIMER,

Auditor of State.

December 11, 1909.

Returned by the Auditor of State, with above certificate, and transmitted to Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

MARK THISTLETHWAITE,

Secretary to the Governor.

Filed in the office of the Secretary of State of the State of Indiana.
December 28, 1909.

FRED SIMS,

Secretary of State.

Received the within report and delivered to the printer December 28, 1909.

A. E. BUTLER,

Clerk Printing Board.

LETTER OF TRANSMITTAL.

INDIANAPOLIS, November 30, 1909.

HON. THOMAS R. MARSHALL, *Governor of Indiana*:

Sir—I have the honor to present herewith the report of the State Board of Health for the fiscal and Board year, ending September 30, 1909. The law says: "They (State Board of Health) shall annually, on or before the first day of December, make a report to the Governor of their transactions and expenditures for the year ending September 30th next preceding, with such suggestions with regard to legislation as they may deem important in reference to the public health."

The Vital Statistics Law commands: "The State Board of Health shall make an annual report of all vital statistics for each calendar year to the Governor, the same to be published with their report of transactions and expenditures for the fiscal year by the commissioners of the public printing and stationery."

It is obviously impossible to furnish the vital statistics for the calendar year at this time, for the year is not ended. Even when the year is ended, December 31st, it will take at least three months, and very likely four months (with our present office force, which is hardly sufficient to carry on the ordinary daily work of the office), to classify, tabulate and analyze the thousands of deaths and births which have been reported to this office. It will be necessary, therefore, to hold the manuscript herewith submitted, or it may be printed, and the statistical report, when ready, can be printed and bound with it.

We interpret the command of the law, "report of transactions," to mean that we shall give a complete account of the work of the Board, as appears in the minutes, but eliminating from said minutes such proceedings as pertain to mere routine affairs which must occur from month to month.

I am sir, with highest respect,

Very respectfully,

J. N. HURTY,
Secretary.

THIRTY-EIGHTH ANNUAL REPORT
OF THE
INDIANA STATE BOARD OF HEALTH.

HON. THOMAS R. MARSHALL, *Governor of Indiana:*

Sir—The Indiana State Board of Health, in accordance with the law, has the honor to present herewith its Thirty-eighth Annual Report.

CONTENTS OF REPORT.

This report gives in full the “transactions and expenditures” of the Board for the year ending September 30, 1909; gives account of the expenditures of its appropriations, and also gives account of the work done in the State Laboratory of Hygiene, which has two divisions, namely, “The Chemical and the Bacteriological and Pathological.” In connection with the report of the Chemical Laboratory is given an account of the work done in the matter of the sanitary inspection of food producing establishments.

VITAL STATISTICS.

Vital statistics may be called the bookkeeping of humanity, for they deal with birth and death, the two most important events of all lives. They constitute the foundation of all public health work, guiding the sanitarian, measuring his progress and supplying the latitude and longitude of society from the life standpoint.

It is believed that the vital statistics collected for the calendar year are more correct than ever before. Our death records are certainly within one or one and a half per cent. of being perfect, as determined by a system of checking used by the United States Census Bureau; and the births are within ten per cent. It is to be said that a more perfect collection of births is impossible under the present law, because it gives physicians and midwives twenty days in

which to report births. Not until it is required that they shall be immediately reported will it be possible to secure records of all births. The law commands that "It shall be the duty of the State Board of Health to collect and tabulate the vital statistics, to study them and endeavor to make intelligent and profitable use of the same for sanitary purposes and the benefit of the people." This the Board tried hard to do, but on account of lack of sufficient appropriation, with which to employ a trained statistician, the work falls upon the executive officer, who must give fully eighty per cent. of his time to correspondence and to executive duties, while to fulfill the requirements of the law and to make the best use of the vital statistics, the entire time of a trained statistician would be required. It is hoped the next legislature will provide for the better and fuller use of vital statistics for the benefit of the people.

SANITARY WORK.

The quarterly reports of the Secretary, as given in the minutes of the Board and as herein presented, show the sanitary work done.

The State Board of Health has been active and made strong efforts to awaken interest in sanitary matters, and has tried hard to see to it that the health laws were enforced. As a result, there has been an increasing demand upon the Board for aid and information. Requests are almost daily received asking that the Board pay visits and give advice in sanitary matters, or solve some sanitary problem which has arisen. As far as possible, the Secretary or some member of the Board has answered these calls in person. To answer all such calls in person would take all of the Secretary's time, and also considerable time of each member of the Board. This is evident when it is known there were over 500 calls from the people in 1909 for personal visits. When it is impossible, on account of distance and time involved, to meet these calls for personal visits, letters of explanation and advice are written. If the demands of the people for personal aid from the State Board of Health are to be met, the authority to employ and the means to support one or two deputy State health officers must be given.

The amended health statute requires that hereafter health officers shall have passed an examination in hygiene and sanitary science, and shall hold office for four years. This is a decided advance, and it may be expected that hereafter the State will have sanitary service that is superior to the past.

EPIDEMICS.

It is most fortunate that the State has not been visited by any widespread epidemic. We have to record, as set forth in the minutes, several mild epidemics of diphtheria and scarlet fever and several severe epidemics of whooping-cough and measles, but they were all of a local character, not even including so large an area as a county. Smallpox has existed somewhere in the State in every month of the year, but almost always in mild form, only 5 deaths having occurred therefrom, as compared with 10 deaths in 1908. In 1908 not a county failed to report smallpox present at some time during the year, but this year only 67 of the 92 have reported it present. As shown in the tables the mortality from diphtheria has decreased as compared with the preceding year. This was most probably the result of the more frequent and earlier use of anti-toxin, for the cases do not show commensurate diminution. Scarlet fever morbidity also shows a decrease, as also does typhoid fever. That some of this decrease is due to better work of the health officers throughout the State seems reasonable to suppose.

STATE LABORATORY OF HYGIENE.

The State Laboratory of Hygiene, in both divisions, has certainly done excellent work, as appears from the reports herein given. The hundreds of diphtheria examinations made in the Bacteriological and Pathological division of the laboratory, have been the means of preventing and staying outbreaks and thus saving lives. The examinations of sputum for tuberculosis, of specimens of blood for malaria and typhoid fever, and the many examinations of pathological specimens have certainly resulted in benefits to the people. The extensive and thorough work of the chemical division of the laboratory, as set forth in the special report herein, must be carefully reviewed to understand its far-reaching economy and usefulness.

RECOMMENDATIONS.

In accordance with the law which makes it the duty of the State Board of Health to make "such suggestions with regard to legislation as they may deem important in reference to the public health," we respectfully recommend as follows:

**SANITARY SCHOOLHOUSES, MEDICAL EXAMINATION OF SCHOOL
CHILDREN AND TEACHING HYGIENE IN THE
PUBLIC SCHOOLS.**

We suggest a statute requiring that all schoolhouses hereafter built shall conform to natural sanitary laws; also that the act should contain a clause requiring that hygiene be taught in the public schools, and that the medical inspection of school children be made compulsory. Not less than 10 per cent. of school moneys is now wasted on account of unsanitary schoolhouses, in which start most of our epidemics, and in which are laid the foundations in many instances for consumption and other diseases in after life. Massachusetts, Michigan and other States have statutes of the character we propose, and better health and progress among the school children has thus been secured, as well as better health in adult life. There is a great opportunity to strengthen the nation by building sanitary schoolhouses and in instructing the children in hygiene.

The medical examination of school children has become a necessity, and should not longer be delayed. In every primary school-room may be found defective and sick children. Many of the defectives may have their defects removed or ameliorated, and the sick ones should be immediately cared for. The British Board of Education says, in its report:

"Medical inspection is founded on a recognition of the close connection which exists between the physical and mental condition of the children and the whole process of education. It seeks to secure ultimately for every child, normal or defective, conditions of life compatible with that full and effective development of its organic functions, its special senses, and its mental powers which constitute a true education."

Medical inspection of school children is a movement national in scope in England, France, Belgium, Sweden, Switzerland, Bulgaria, Japan, the Argentine Republic and Germany. In the United States, seventy cities outside of Massachusetts, and all cities and towns of that State, have systems of medical inspection.

Massachusetts has a compulsory medical inspection law. New Jersey has a permissive one, Vermont a law requiring the annual testing of the vision and hearing of all school children, and Connecticut one providing for such tests triennially.

Now that we know that thousands of children in the United States of America annually go down to their graves through suffering, because both the state and the parents fail to early remove or ameliorate physical defects and to discover and treat incipient dis-

ease, it becomes a sin of omission not to accept and put into practical operation the methods by which science shows their lives may be saved.

A bill was introduced into the 66th General Assembly which was carefully drawn and which was approved by the State Board of Education and the State Board of Health. It failed to pass, but it introduced the subject and brought investigation and discussion, and in the course of the general advancement of the State, the medical inspection of school children must become a reality. We respectfully petition that this important matter be presented to the legislature in your next annual message.

STREAM POLLUTION—PUBLIC WATER SUPPLIES—SANITARY SEWAGE DISPOSAL.

Indiana is an inland State, and is fortunately supplied with numerous streams and lakes, and except in the central and southern portions, there is yet an abundance of ground water. It is apparent that our streams and lakes are valuable assets, and should be jealously protected from pollution or other destruction. They are sources of beauty and refreshment to the land, sources of valuable food supply, and must eventually furnish public water supplies. It is this last fact which makes it urgent that early action be taken for their preservation.

The experience of the Indianapolis and of the Muncie water companies demonstrates that the ground water is limited, is growing less and less, and is inadequate for the public supply. For a few years both of the cities named had an abundant pure supply, but gradually the quantity diminished and new wells were bored. This did not relieve the situation, for the new wells penetrated the same water-bearing strata as the old ones, and no increase in the quantity was secured.

The Muncie Water Company relieved the situation for a time by making up the deficiency with filtered water from White River, but lately the oil wells above Muncie so badly polluted the river with kerosene products that it was impossible to filter the water. This drove the Muncie company to dam a small creek and establish a water-shed. It is certain, however, if stream pollution is permitted to continue, that this supply for Muncie cannot be depended upon.

The Indianapolis Water Company has been compelled to put in extensive filter beds, costing five or six hundred thousand dollars,

to filter the water from White River. This filtered water is at present mixed with deep well water (the amount of the latter diminishing daily), and this constitutes the Indianapolis supply. The lesson is: Indianapolis must very soon depend entirely upon the river, and if the gross pollution which now exists is permitted to continue, filtration will become more and more difficult and expensive, and Indianapolis, and also other cities on the shores of White River, will be sorely injured, possibly to a degree to stop their growth. What has occurred along White River will in time occur in all parts of the State, and now seems to be the time to apply the remedy.

The law passed by the General Assembly of 1909 does not cover all the points necessary to secure to the future pure water supplies for the cities in the White River Valley. The said law makes no provisions for establishing a sanitary district, so governed as to gradually restore sufficient forest area to conserve the annual rainfall. This is all-important, and each year it is delayed the more difficult and costly it becomes. It is imperative for the future growth of our State, that sooner or later the problem of conserving the annual rainfall be solved, and this must be done to a large degree through reforestation.

As cities and towns are continually making expensive mistakes in the matter of establishing public water supplies and in building sewers and drains, it seems wise to adopt the successful method pursued in Ohio, Massachusetts, Pennsylvania and other States, to prevent such mistakes, with their consequent money loss and sanitary failure. This method is to require by statute that all plans and specifications for public water supplies, and for sewers and drains, shall be submitted for the approval of the State Board of Health before the same may be legally constructed.

For the State Board of Health to properly execute a law controlling stream pollution, the water supplies and sewer construction, a sanitary engineering department would be required, and, therefore, said law would necessarily create such department. There should be a competent sanitary engineer appointed by the State Board, and a proper appropriation given for the enforcement of the act.

We believe a wise law of this character is absolutely necessary for the promotion of the welfare of the State, and would be an economic measure, and for these reasons we propose the same. We further believe that the protection of the lakes and streams from

pollution-destruction is a subject which will not down, and the question about the matter is: Shall the State attend to it now, or do so after disease, death and pecuniary loss compel action?

THE HEALTH AND THE VITAL STATISTICS LAWS.

The present health law, passed by the 66th General Assembly, is very good, and in the opinion of the State Board of Health needs no change at this time. It is vague and indefinite in certain sections, but not sufficiently so as to demand immediate amendment. The future will probably develop a necessity for the removal of the vague provisions.

The vital statistics law is exceedingly lame, in that it gives twenty days' time in which physicians and midwives may report births. This provision almost invalidates the law, and indeed, would do so were it not that the medical profession, with few exceptions, waive the right and return immediate reports. However, there are not a few doctors who are negligent or who actually oppose making reports, who take the full twenty days or use it to defeat the purpose of the law. The only improvement recommended for the vital statistics law at this time, is to substitute two for twenty when the time allowed for reporting births is set forth.

THE HEALTH APPROPRIATION.

High authorities declare that "the care of the health of the people is the first duty of government," for all wealth, power and happiness depend upon health. The law charges the care of the health of the people upon the State Board of Health, it gives specific directions what shall be done, and bestows all powers necessary to fulfill the law; but sufficient money for the full enforcement has been refused. Ten thousand dollars is the amount given with which to accomplish: "Supervision of the health and lives of the citizens of the State. . . . make sanitary inspections and surveys in all parts of the State, and of all public buildings and institutions, . . . to combat infectious and contagious diseases, to establish quarantine, . . . to prescribe and regulate the character and location of plumbing, drainage, water supply, disposal of sewage, lighting, heating and ventilation and all sanitary features of all public buildings and institutions; . . . to govern, direct and advise with all local health authorities; . . . to supervise the system of registration of births, deaths

and marriages, to collect, tabulate and analyze the vital statistics of the State; to enforce the stream pollution law."

It certainly is obvious that with \$10,000 annually, it is impossible to fulfill more than a part of the commands of the statute. Indiana has an area of 36,350 square miles and a population of two and three-quarter millions of people. To enforce, over such an area for such number of people, the law to prevent the pollution of streams, would alone require a competent sanitary engineer and assistants, and also a special outfit of engineering instruments. The total appropriation for the State Board of Health would not suffice to do this work alone, and consequently it must go undone, and the streams pollution law is therefore practically a dead letter. To thoroughly collect, tabulate and analyze the vital statistics for almost three million people is a prodigious work. A trained vital statistician, with trained assistants, are required to properly look after the vital statistics of the State, and the entire appropriation now given would not suffice; therefore the vital statistics law is only partially carried out and, obviously, to the loss and disadvantage of the people. When, in addition to the work imposed by the streams pollution act and the vital statistics law, we consider the other duties which the laws lay upon the State Board of Health, it plainly appears that in providing so sparingly for the enforcement of the health laws, the legislature has to a large degree nullified its laws.

SUMMARY.

A medical school inspection law is imperative if we are to save the lives of many school children and promote their efficiency and happiness.

The vital statistics law should be amended in the slight particular that only two days instead of twenty be allowed in which physicians and midwives shall report births.

A sufficient appropriation must be given if all of the excellent provisions of the health laws are enforced.

We respectfully petition you, as Governor, to recommend that the 67th General Assembly consider these matters and dispose of them as in its wisdom seems best.

Approved by the State Board of Health, and ordered transmitted to the Governor.

FINANCIAL STATEMENTS.

INDIANA STATE BOARD OF HEALTH.

For Fiscal Year October 1, 1908, to September 30, 1909.

1908.

Oct.	9.	To Indianapolis Telephone Co., rent 3 months	\$20 00
"	9.	To Joe A. Downey, U. S. Postal Guide.....	3 50
"	9.	To J. L. Anderson, expense.....	7 11
"	9.	To Elsie M. Hunt, copying.....	15 00
"	9.	To Dr. Geo. T. McCoy, board meeting.....	12 25
"	9.	To Dr. T. Henry Davis, board meeting.....	13 26
"	9.	To Dr. Wm. N. Wishard, board meeting.....	10 00
"	31.	To Maude Linn, salary.....	50 00
"	31.	To Mrs. Eva Case, salary.....	50 00
"	31.	To Mrs. Florence Vollrath, salary.....	50 00
"	31.	To Ethel Hoffman, salary.....	50 00
"	31.	To Louise Lingenfelter, salary.....	50 00
"	31.	To Fanny Stevenson, salary.....	40 00
Nov.	5.	To Dr. Fred A. Tucker, board meeting.....	10 96
"	5.	To Dr. Geo. T. McCoy, board meeting.....	12 25
"	5.	To Dr. Henry Davis, board meeting.....	12 76
"	5.	To Dr. Wm. N. Wishard, board meeting.....	10 00
"	28.	To Robt. H. Bryson, P. M., postage stamps...	100 00
"	30.	To Maude Linn, salary.....	50 00
"	30.	To Mrs. Eva Case, salary.....	50 00
"	30.	To Mrs. Florence Vollrath, salary.....	50 00
"	30.	To Ethel Hoffman, salary.....	50 00
"	30.	To Louise Lingenfelter, salary.....	50 00
"	30.	To Fannie Stevenson, salary.....	40 00
Dec.	11.	To Aquos Distilled Water Co., merchandise..	4 00
"	11.	To J. L. Anderson, expense.....	37 04
"	11.	To Wm. B. Burford, printing and stationery.	353 45
"	11.	To Indianapolis Telephone Co., tolls.....	9 30
"	11.	To American Express Co., services.....	10 36
"	11.	To Adams Express Co., services.....	7 38
"	11.	To U. S. Express Co., services.....	3 76
"	11.	To H. M. Bracken, secretary-treasurer, dues.	10 00
"	11.	To F. J. Mabey, photos.....	2 00
"	11.	To G. R. Lawrence Co., photos.....	7 50
"	11.	To Scofield-Pierson Co., books.....	4 00
"	11.	To Smith Premier Typewriter Co., ribbons...	1 50
"	11.	To E. G. Soltman, set Rogers mottoes.....	8 00
"	11.	To Western Union Telegraph Co., services...	4 42
"	30.	To Dr. F. A. Tucker, board meeting.....	11 96
"	30.	To Dr. Geo. T. McCoy, board meeting.....	11 75

Dec. 30.	To Dr. T. Henry Davis, board meeting.....	\$13 26
" 30.	To Dr. Wm. N. Wishard, board meeting.....	10 00
" 31.	To Maude Linn, salary.....	50 00
" 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00
" 31.	To Ethel Hoffman, salary.....	50 00
" 31.	To Louise Lingenfelter, salary.....	50 00
" 31.	To Fannie Stevenson, salary.....	40 00
Total first quarter.....		\$1,606 77
1909.		
Jan. 8.	To Am. Tollet Supply Co., laundry.....	\$3 75
" 8.	To J. L. Anderson, expense.....	3 33
" 8.	To American Medical Association, journal...	5 00
" 8.	To Wm. B. Burford, printing and stationery.	1,183 63
" 8.	To Adams Express Co., services.....	4 56
" 8.	To American Express Co., services.....	11 32
" 8.	To United States Express Co., services.....	3 92
" 8.	Indianapolis Telephone Co., rent and tolls...	30 90
" 8.	To Central Union Telephone Co., rent and tolls	22 95
" 8.	To Hogan Transfer and Storage Co., freight and drayage	50
" 8.	To The Scofield-Pierson Co., books.....	6 00
" 8.	To Smith Premier Typewriter Co., pt. oil....	75
" 8.	To Dr. J. N. Hurty, expense.....	59 83
" 8.	To Dr. F. A. Tucker, board meeting.....	11 96
" 8.	To Dr. Geo. T. McCoy, board meeting.....	12 50
" 8.	To Dr. Wm. N. Wishard, board meeting.....	10 00
" 8.	To T. Henry Davis, M. D., board meeting....	12 76
" 8.	To A. W. Brayton, inspection.....	30 00
" 31.	To Maude Linn, salary.....	50 00
" 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00
" 31.	To Ethel Hoffman, salary.....	50 00
" 31.	To Louise Lingenfelter, salary.....	50 00
" 31.	To Fannie Stevenson, salary.....	50 00
Feb. 11.	To Dr. Wm. N. Wishard, board meeting.....	10 00
" 11.	To Dr. T. Henry Davis, board meeting.....	12 76
" 11.	To Dr. Geo. T. McCoy, board meeting.....	11 75
" 11.	To Dr. Fred A. Tucker, board meeting.....	11 76
" 11.	To Robt. H. Bryson, P. M., postage stamps...	100 00
" 28.	To Maude Linn, salary.....	50 00
" 28.	To Mrs. Eva Case, salary.....	50 00
" 28.	To Mrs. Florence Vollrath, salary.....	50 00
" 28.	To Ethel Hoffman, salary.....	50 00
" 28.	To Louise Lingenfelter, salary.....	50 00
" 28.	To Fannie Stevenson, salary.....	50 00
Mar. 31.	To Maude Linn, salary.....	50 00
" 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00

Mar. 31.	To Ethel Hoffman, salary.....	\$50 00
" 31.	To Louise Lingenfelter, salary.....	50 00
" 31.	To Fannie Stevenson, salary.....	50 00
Total second quarter.....		\$2,459 98
Apr. 9.	To American Toilet Supply Co., laundry.....	\$3 75
" 9.	To American Medical Association, pubs.....	4 00
" 9.	To J. L. Anderson, expense.....	16 52
" 9.	To Aquos Distilled Water Co., merchandise..	8 00
" 9.	To W. H. Bass Photo Co., photos and slides..	13 50
" 9.	To Wm. B. Burford, printing and stationery.	330 44
" 9.	To The F. A. Bassett Co., journal.....	2 00
" 9.	To Adams Express Co., services 3 months...	18 42
" 9.	To American Express Co., services 3 months.	19 54
" 9.	To U. S. Express Co., services 3 months.....	4 70
" 9.	To Hogan Transfer Co., drayage.....	50
" 9.	To E. S. Harvey, photos.....	3 18
" 9.	To Dr. J. N. Hurty, expense.....	93 07
" 9.	To Indianapolis Calcium Light Co., lantern..	29 30
" 9.	To S. D. Kiger & Co., merchandise.....	3 00
" 9.	To Sheetz Addressing and T. W. Co., services	2 50
" 9.	To Smith Premier T. W. Co., bal. on machine	63 75
" 9.	To Stone & Forsythe, banners.....	10 00
" 9.	To Cent. Union Telephone Co., rent and tolls.	37 55
" 9.	To Indianapolis Telephone Co., rent and tolls	36 95
" 9.	To Chas. R. Trowbridge, press clippings.....	12 00
" 9.	To Western Union Telegraph Co., tolls.....	7 78
" 9.	To G. M. Merrick, repairs on typewriter.....	50
" 9.	To Dr. Fred A. Tucker, board meeting.....	10 96
" 9.	To Dr. Geo. T. McCoy, board meeting.....	12 50
" 9.	To Dr. T. Henry Davis, board meeting.....	13 11
" 26.	To Robt. H. Bryson, P. M., postage stamps...	200 00
" 30.	To Maude Linn, salary.....	12 50
" 30.	To Mrs. Eva Case, salary.....	50 00
" 30.	To Mrs. Florence Vollrath, salary.....	50 00
" 30.	To Ethel Hoffman, salary.....	50 00
" 30.	To Louise Lingenfelter, salary.....	50 00
" 30.	To Fannie Stevenson, salary.....	50 00
May 21.	To Dr. M. P. Ravenel, services.....	100 00
" 21.	To Dr. C. A. L. Reed, services.....	25 00
" 21.	To Dr. Geo. T. McCoy, health officers' school.	23 50
" 21.	To Dr. T. Henry Davis, health officers' school	12 76
" 21.	To Dr. Fred A. Tucker, expenses and health officers' school	45 63
" 24.	To Prof. Severance Burrage, services.....	10 00
" 24.	To Dr. A. W. Brayton, services.....	10 00
" 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00
" 31.	To Ethel Hoffman, salary.....	50 00

May 31.	To Louise Lingenfelter, salary.....	\$50 00
" 31.	To Fannie Stevenson, salary.....	50 00
June 25.	To Dr. Geo. T. McCoy, board meeting.....	12 50
" 25.	To Dr. Fred A. Tucker, board meeting.....	10 98
" 25.	To Dr. M. Knowlton, lantern slides.....	10 80
" 30.	To Mrs. Eva Case, salary.....	50 00
" 30.	To Mrs. Florence Vollrath, salary.....	50 00
" 30.	To Ethel Hoffman, salary.....	50 00
" 30.	To Louise Lingenfelter, salary.....	50 00
" 30.	To Fannie Stevenson, salary.....	50 00
Total third quarter.....		\$1,981 17
July 9.	To American Toilet Supply Co., laundry.....	\$3 75
" 9.	To Aquos Distilled Water Co., merchandise..	15 50
" 9.	To W. H. Bass Photo Co., merchandise.....	8 20
" 9.	To A. W. Brayton, services.....	25 00
" 9.	To Wm. B. Burford, printing and stationery.	709 47
" 9.	To Claypool Hotel, services.....	24 10
" 9.	To H. M. Bracken, secretary State and Prov. Bds. of H., dues.....	15 00
" 9.	To Adams Express Co., services.....	11 02
" 9.	To American Express Co., services.....	11 80
" 9.	To U. S. Express Co., services.....	3 43
" 9.	To Indianapolis Calcium Light Co., services..	17 00
" 9.	To Indianapolis Telephone Co., rent and tolls.	30 65
" 9.	To Cent. Union Telephone Co., rent and tolls.	31 95
" 9.	To H. Lieber Co., merchandise.....	4 50
" 9.	To Dr. Geo. M. Sternberg, secty-treas., dues..	5 00
" 9.	To Smith Premier Typewriter Co., merchan- dise	3 75
" 9.	To W. K. Stewart Co., books.....	6 00
" 9.	To G. E. Stechert & Co., books.....	1 62
" 9.	To Chas. E. Trowbridge, press clippings.....	10 00
" 9.	To G. M. Merrick, agent, typewriter repairs..	4 50
" 9.	To Western Union Telegraph Co., services...	4 60
" 9.	To J. L. Anderson, expense.....	23 83
" 9.	To J. N. Hurty, expense.....	172 97
" 9.	To Dr. Fred A. Tucker, expense.....	98 36
" 9.	To Dr. Geo. T. McCoy, board meeting.....	11 75
" 9.	To Dr. Wm. N. Wishard, board meeting.....	10 00
" 9.	To Dr. Fred A. Tucker, board meeting.....	10 96
" 10.	To Mary Burke East, services.....	36 25
" 10.	To J. E. Ewers, photos.....	54 60
" 16.	To Dr. Geo. T. McCoy, board meeting.....	12 50
" 16.	To Dr. Fred A. Tucker, board meeting.....	11 81
" 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00
" 31.	To Ethel Hoffman, salary.....	50 00

July 31.	To Louise Lingenfelter, salary.....	\$50 00
" 31.	To Fannie Stevenson, salary.....	50 00
" 31.	To Miriam I. Tull, salary.....	40 00
Aug. 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00
" 31.	To Ethel Hoffman, salary.....	50 00
" 31.	To Louise Lingenfelter, salary.....	50 00
" 31.	To Fannie Stevenson, salary.....	50 00
" 31.	To Miriam I. Tull, salary.....	40 00
Sept. 7.	To Dr. Geo. T. McCoy, board meeting.....	12 25
" 7.	To Dr. T. Henry Davis, board meeting.....	13 11
" 8.	To Dr. Fred A. Tucker, board meeting.....	23 77
" 9.	To Robt. H. Bryson, P. M., postage stamps...	100 00
" 15.	To Rochester Lithographing Co., charts.....	70 00
" 30.	To J. L. Anderson, expense.....	15 92
" 30.	To American Toilet Supply Co., laundry.....	3 75
" 30.	To Aquos Distilled Water Co., merchandise..	4 00
" 30.	To Wm. B. Burford, printing and stationery.	1,252 35
" 30.	To Adams Express Co., services.....	7 60
" 30.	To American Express Co., services.....	6 71
" 30.	To United States Express Co., services.....	5 82
" 30.	To Indianapolis Telephone Co., tolls.....	1 90
" 30.	To Central Union Telephone Co., tolls.....	9 75
" 30.	To Indianapolis Calcium Light Co., services..	18 80
" 30.	To Indiana Seal Stamp Stencil Co., merchan- dise	7 75
" 30.	To E. E. Mungold, photos.....	6 00
" 30.	To G. M. Merrick, agent Victor T. W. Co., merchandise	6 75
" 30.	To W. K. Stewart Co., books.....	8 05
" 30.	To W. F. Stieff, binding books.....	7 50
" 30.	To Western Union Telegraph Co., tolls.....	3 94
" 30.	To Dr. J. N. Hurty, expense.....	53 62
" 24.	To Dr. Geo. T. McCoy, board meeting.....	17 62
" 24.	To Wm. N. Wishard, board meeting.....	10 00
" 24.	To T. Henry Davis, board meeting.....	13 26
" 24.	To Dr. F. A. Tucker, board meeting.....	10 96
" 30.	To Mrs. Eva Case, salary.....	50 00
" 30.	To Mrs. Florence Vollrath, salary.....	50 00
" 30.	To Ethel Hoffman, salary.....	50 00
" 30.	To Louise Lingenfelter, salary.....	50 00
" 30.	To Fannie Stevenson, salary.....	50 00
" 30.	To Miriam I. Tull, salary.....	40 00
Total fourth quarter.....		\$3,951 05
Appropriation		\$10,000 00
Expense first quarter		\$1,606 77
Expense second quarter		2,459 93

Expense third quarter	\$1,981 17
Expense fourth quarter	3,951 05
Total expense	9,998 92
Amount reverting to general fund.....	\$1 08
Secretary's salary (specific).....	\$3,000 00
Chief clerk's salary (specific).....	1,500 00

INDIANA STATE BOARD OF HEALTH—LABORATORY OF HYGIENE.

For Fiscal Year October 1, 1908, to September 30, 1909.

1908.

Oct. 9.	To Central Union Telephone Co., rent to December 31, 1908.....	\$17 50
" 9.	To Central Union Telephone Co., tolls.....	1 50
" 9.	To J. L. Anderson, expense.....	3 75
" 29.	To Bertermann Bros., merchandise.....	2 00
" 29.	To The H. Lieber Co., merchandise.....	5 50
" 29.	To Vonnegut Hardware Co., merchandise....	2 35
" 29.	To Weber Drug Co., cult. media.....	41 75
" 29.	To Prof. Severance Burrage, services.....	10 00
" 29.	To R. L. Sackett, services.....	15 00
" 29.	To Dr. Helene Knabe, expense.....	7 75
" 29.	To Harry Wyatt, labor.....	10 00
" 31.	To Dr. Helene Knabe, salary.....	116 67
" 31.	To Dr. Ada Schweitzer, salary.....	75 00
" 31.	To Dr. R. S. Rissler, salary.....	75 00
" 31.	To Mrs. F. M. Carper, salary.....	50 00
" 31.	To Robt. P. Johnson, salary.....	45 00
" 31.	To J. H. Brewster, salary.....	100 00
" 31.	To Ernest Elmore, salary.....	30 00
Nov. 9.	To The Francis Pharmacy Co., merchandise.	1 10
" 9.	To The Pittman-Myers Co., drugs.....	8 58
" 9.	To Dr. H. M. Alexander & Co., tuberculin....	4 50
" 9.	To Dr. Wm. Schoenhelt (Winyal Sanatorium), tuberculin	12 03
" 9.	To J. L. Anderson, expense.....	13 85
" 9.	To Dr. Geo. T. McCoy, conf. International and State Boards of Health.....	67 70
" 9.	To Dr. Fred A. Tucker, conference International and State Boards of Health.....	81 95
" 9.	To Dr. J. N. Hurty, conference of International and State Boards of Health.....	77 00
" 9.	To Bertermann Bros., merchandise.....	2 50
" 30.	To Dr. Helene Knabe, salary.....	116 67
" 30.	To Dr. Ada Schweitzer, salary.....	75 00
" 30.	To Dr. R. S. Rissler, salary.....	75 00
" 30.	To Mrs. F. M. Carper, salary.....	50 00

Nov. 30.	To Robt. P. Johnson, salary.....	\$45 00
" 30.	To J. H. Brewster, salary.....	100 00
" 30.	To Ernest Elmore, salary.....	80 00
Dec. 11.	To Aquos Distilled Water Co., water.....	1 00
" 11.	To American Express Co., services.....	3 25
" 11.	To Adams Express Co., services.....	3 95
" 11.	To U. S. Express Co., services.....	46
" 11.	To Wm. B. Burford, printing and stationery..	96 93
" 11.	To Central Union Telephone Co., tolls.....	9 40
" 11.	To Indianapolis Tent and Awning Co., labor.	50
" 11.	To Pittman-Myers Co., drugs.....	13 10
" 11.	To Scofield-Pierson Co., books.....	2 50
" 11.	To G. E. Stechert & Co., books.....	3 75
" 11.	To Weber Drug Co., culture media.....	36 20
" 11.	To Pettis Dry Goods Co., merchandise.....	1 90
" 11.	To Bausch & Lomb Optical Co., drugs.....	16 25
" 31.	To Dr. J. P. Simonds, salary.....	166 67
" 31.	To Dr. R. S. Rissler, salary.....	75 00
" 31.	To Dr. Ada Schweitzer, salary.....	75 00
" 31.	To Mrs. F. M. Carper, salary.....	50 00
" 31.	To Robt. P. Johnson, salary.....	45 00
" 31.	To J. H. Brewster, salary.....	100 00

Total first quarter.....

\$2,070 51

1909.

Jan. 8.	To American Toilet Supply Co., laundry.....	\$9 90
" 8.	To J. L. Anderson, expense.....	6 70
" 8.	To Wm. H. Armstrong Co., surgical instruments	8 00
" 8.	To Wm. B. Burford, printing and stationery.	26 30
" 8.	To Adams Express Co., services.....	80
" 8.	To American Express Co., services.....	2 15
" 8.	To Hogan Transfer Co., freight and drayage.	1 75
" 8.	To Pittman-Myers Co., merchandise.....	14 00
" 8.	To J. P. Simonds, expense.....	3 20
" 8.	To Whitall-Tatum Co., merchandise.....	71 51
" 30.	To Dr. J. P. Simonds, expense	13 81
" 31.	To Dr. J. P. Simonds, salary	166 66
" 31.	To Dr. R. S. Rissler, salary.....	100 00
" 31.	To Dr. Ada Schweitzer, salary.....	100 00
" 31.	To Mrs. F. M. Carper, salary.....	50 00
" 31.	To Robt. P. Johnson, salary.....	55 00
" 31.	To J. H. Brewster, salary.....	100 00
Feb. 25.	To Dr. J. P. Simonds, expense	6 88
" 28.	To Dr. J. P. Simonds, salary	166 67
" 28.	To Dr. R. S. Rissler, salary.....	66 67
" 28.	To Dr. Ada Schweitzer, salary.....	100 00
" 28.	To W. Shimer, salary.....	33 33
" 28.	To Mrs. F. M. Carper, salary.....	50 00

Feb. 28.	To Robt. P. Johnson, salary.....	\$55 00
" 28.	To J. H. Brewster, salary.....	100 00
Mar. 16.	To J. L. Anderson, expense.....	21 15
" 16.	To Wm. B. Burford, printing and stationery..	143 95
" 16.	To The Chemical Engineer, subscription 1909.	2 00
" 16.	To Ernest Lietz, laboratory apparatus.....	24 00
" 16.	To F. J. Mack & Co., two signs.....	18 50
" 16.	To Pettis Dry Goods Co., merchandise.....	1 90
" 16.	To Pittman-Myers Co., drugs.....	1 70
" 16.	To E. H. Sargent & Co., laboratory supplies..	30 29
" 16.	To W. B. Saunders Co., books.....	9 50
" 16.	To Wm. Schoenhelt (Winyah Sanatorium), tuberculin	6 03
" 16.	To The Scofield-Pierson Co., books.....	2 50
" 16.	To The Smith Premier Typewriter Co., repairs	25
" 16.	To G. E. Stechert & Co., subscriptions to books	102 05
" 16.	To Weber Drug Co., culture media.....	15 00
" 16.	To H. E. Zimmer, merchandise.....	55
" 27.	To Dr. J. P. Simonds, expense	19 63
" 31.	To Dr. J. P. Simonds, salary	166 67
" 31.	To Dr. W. Shimer, salary.....	100 00
" 31.	To Ada Schweitzer, salary.....	100 00
" 31.	To Mrs. F. M. Carper, salary.....	50 00
" 31.	To Robt. P. Johnson, salary.....	55 00
" 31.	To J. H. Brewster, salary.....	100 00
" 30.	To R. L. Sackett, expense.....	15 00
Total second quarter.....		\$2,294 00
Apr. 9.	To E. H. Elmore, extra work.....	\$5 00
" 9.	To American Toilet Supply Co., laundry....	10 55
" 9.	To Aquos Distilled Water Co., merchandise..	4 00
" 9.	To Am. Med. Pub. Co., subs. January, 1908, to January, 1910	2 00
" 9.	To J. L. Anderson, expense.....	8 35
" 9.	To Bausch & Lomb Optical Co., repairs.....	11 00
" 9.	To Wm. B. Burford, printing and stationery..	67 19
" 9.	To Francis Pharmacy Co., merchandise.....	3 50
" 9.	To Adams Express Co., services.....	4 10
" 9.	To American Express Co., services.....	6 97
" 9.	To U. S. Express Co., services.....	1 00
" 9.	To The Johns Hopkins Press, bulletins 1 year	2 00
" 9.	To L. E. Morrison & Co., T. B. exhibit trunk.	45 00
" 9.	To Pettis Dry Goods Co., merchandise.....	1 90
" 9.	To Pittman-Myers Co., merchandise.....	13 75
" 14.	To Dr. J. P. Simonds, expense.....	11 54
" 21.	To Dr. J. P. Simonds, expense.....	4 17
" 23.	To Robt. H. Bryson, P. M., postage stamps...	100 00
" 30.	To Dr. J. P. Simonds, salary.....	106 66
" 30.	To Dr. W. Shimer, salary.....	100 00

Apr. 30.	To Dr. Ada Schweitzer, salary.....	\$100 00
" 30.	To Mrs. F. M. Carper, salary.....	16 67
" 30.	To Mabel J. Abraham, salary.....	33 33
" 30.	To Robt. P. Johnson, salary.....	55 00
" 30.	To Cullen Thomas, salary.....	25 00
" 30.	To J. H. Brewster, salary.....	100 00
May 17.	To Improved Mailing Case Co., merchandise..	482 63
" 29.	To Hogan Transfer Co., freight and drayage.	13 59
" 31.	To J. P. Simonds, salary.....	166 67
" 31.	To W. Shimer, salary.....	100 00
" 31.	To Dr. Ada Schweitzer, salary.....	100 00
" 31.	To Mabel J. Abraham, salary.....	50 00
" 31.	To Robt. P. Johnson, salary.....	55 00
" 31.	To J. H. Brewster, salary.....	100 00
" 31.	To Cullen Thomas, salary.....	25 00
June 1.	To J. L. Anderson, expense.....	17 00
" 1.	To Wm. H. Armstrong Co., merchandise.....	5 00
" 1.	To Aquos Distilled Water Co., merchandise..	2 00
" 1.	To Wm. Schoenheit (Winyah Sanitarium), tu- berculin	12 03
" 1.	To Wm. B. Burford, printing and stationery.	13 25
" 1.	To Adams Express Co., services.....	2 10
" 1.	To American Express Co., services.....	85
" 1.	To United States Express Co., services.....	1 00
" 1.	To The Francis Pharmacy Co., merchandise..	8 15
" 1.	To Pittman-Myers Co., merchandise.....	8 47
" 1.	To Dr. J. P. Simonds, expense.....	8 95
" 1.	To Smith Premier Typewriter Co., merchan- dise	1 50
" 1.	To W. K. Stewart Co., books.....	6 00
" 1.	To H. E. Zimmer, merchandise.....	4 15
" 30.	To Dr. J. P. Simonds, salary.....	166 67
" 30.	To Dr. W. Shimer, salary.....	100 00
" 30.	To Dr. Ada Schweitzer, salary.....	100 00
" 30.	To Mabel J. Abraham, salary.....	50 00
" 30.	To Robt. P. Johnson, salary.....	55 00
" 30.	To J. H. Brewster, salary.....	100 00
" 30.	To Cullen Thomas, salary.....	25 00
" 30.	To J. J. Hinman, salary.....	23 00
" 30.	To H. E. Barnard, expense.....	66 36
" 30.	To A. W. Bruner, expense.....	64 11
" 30.	To B. W. Cohn, expense.....	46 90
" 30.	To F. W. Tucker, expense.....	78 75
" 30.	To John Owens, expense.....	96 79

Total third quarter..... \$3,054 60

July 9.	To American Toilet Supply Co., laundry.....	\$36 80
" 9.	To J. L. Anderson, expense.....	6 20
" 9.	To Aquos Distilled Water Co., merchandise..	1 50

July	9.	To Bausch & Lomb Optical Co., merchandise.	\$1 80
"	9.	To Bultman & Arnold, copying.....	2 25
"	9.	To Wm. B. Burford, printing and stationery.	85 09
"	9.	To Chicago Medical Book Co., books.....	6 20
"	9.	To Elmer & Amend, merchandise.....	196 15
"	9.	To Adams Express Co., services.....	3 05
"	9.	To American Express Co., services.....	7 65
"	9.	To U. S. Express Co., services.....	1 10
"	9.	To Francis Pharmacy Co., merchandise.....	1 95
"	9.	To Indianapolis Sanitary Co., services.....	10 00
"	9.	To C. V. Mosby Med. Book and Pub. Co., books	10 00
"	9.	To Municipal Journal and Engineer, subscrip- tion	3 00
"	9.	To Oliver Typewriter Co., machine.....	72 90
"	9.	To Pittman-Myers Co., merchandise.....	30 97
"	12.	To Irene Coerper, services.....	32 00
"	15.	To J. N. Hurty, secretary, postage stamps...	100 00
"	23.	To H. E. Barnard, expense.....	35 57
"	31.	To Dr. J. P. Simonds, salary.....	166 66
"	31.	To Dr. W. Shimer, salary.....	100 00
"	31.	To Dr. Ada Schweitzer, salary.....	100 00
"	31.	To Mabel J. Abraham, salary.....	50 00
"	31.	To Robt. P. Johnson, salary.....	75 00
"	31.	To J. H. Brewster, salary.....	116 67
"	31.	To Cullen Thomas, salary.....	25 00
"	31.	To J. J. Hinman, salary.....	30 00
"	31.	To A. W. Bruner, expense.....	83 39
"	31.	To F. W. Tucker, expense.....	91 06
"	31.	To John Owens, expense.....	107 55
"	31.	To H. E. Barnard, expense.....	70 65
"	31.	To B. W. Cohn, expense.....	57 66
Aug.	5.	To Indianapolis Sanitary Co., hauling garbage	12 50
"	10.	To Robt. H. Bryson, P. M., postage stamps...	100 00
"	31.	To Dr. J. P. Simonds, salary.....	166 67
"	31.	To Dr. Will Shimer, salary.....	100 00
"	31.	To Dr. Ada Schweitzer, salary.....	100 00
"	31.	To Mabel J. Abraham, salary.....	50 00
"	31.	To Robt. P. Johnson, salary.....	75 00
"	31.	To J. H. Brewster, salary.....	116 67
"	31.	To Cullen Thomas, salary.....	25 00
"	31.	To J. J. Hinman, salary.....	30 00
"	31.	To F. W. Tucker, salary.....	100 00
"	31.	To John Owens, salary.....	100 00
"	31.	To H. E. Barnard, expense.....	128 38
"	31.	To A. W. Bruner, expense.....	78 95
"	31.	To B. W. Cohn, expense.....	11 40
"	31.	To F. W. Tucker, expense.....	58 05
"	31.	To John Owens, expense.....	97 58
Sept.	1.	To Indianapolis Sanitary Co., hauling garbage	10 00
"	9.	To Robt. H. Bryson, P. M., postage stamps..	200 00

Sept. 17.	To Robt. H. Bryson, P. M., postage stamps..	\$100 00
" 20.	To J. H. Brewster, expense.....	22 80
" 20.	To Miss I. D. Coerper, services.....	11 54
" 14.	To D. Appleton & Co., text-book.....	12 00
" 14.	To Aquos Distilled Water Co., merchandise..	3 00
" 14.	To Balke & Krauss Co., merchandise.....	4 99
" 14.	To Bultman & Arnold, copying.....	5 10
" 14.	To Wm. B. Burford, printing and stationery.	161 64
" 14.	To Elmer & Amend, laboratory apparatus...	167 20
" 14.	To Dr. W. E. Evans, lectures and services....	25 00
" 14.	To Evans & Fulton, cabinet and cases.....	62 92
" 14.	To Francis Pharmacy Co., merchandise.....	4 15
" 14.	To Hogan Transfer Co., freight and drayage.	5 19
" 14.	To Dr. Geo. T. McCoy, expense.....	80 60
" 14.	To Pettis Dry Goods Co., merchandise.....	2 26
" 14.	To Romadke Leather Goods Co., case.....	8 75
" 14.	To Dr. J. P. Simonds, expense.....	3 20
" 14.	To Dr. Will Shimer, expense.....	9 45
" 14.	To The Star Store, merchandise.....	3 00
" 14.	To The Scofield-Pierson Co., book.....	2 00
" 14.	To Schnull & Co., merchandise.....	12 75
" 14.	To W. K. Stewart Co., text-books.....	5 50
" 14.	To G. M. Merrick, agent Victor typewriters, merchandise	7 70
" 14.	To Vonnegut Hardware Co., merchandise....	5 85
" 14.	To Weber Drug Co., merchandise.....	30 00
" 14.	To William Wood & Co., text-book.....	18 00
" 14.	To Harry Wyatt, labor.....	22 00
" 14.	To H. E. Zimmer, merchandise.....	2 55
" 14.	To J. L. Anderson, merchandise.....	14 10
" 30.	To Indianapolis Telephone Co., rental.....	17 50
" 30.	To Central Union Telephone Co., rental....	17 50
" 30.	To Wm. H. Armstrong Co., merchandise.....	8 33
" 30.	To J. L. Anderson, expense.....	7 40
" 30.	To American Toilet Supply Co., laundry....	29 45
" 30.	To L. S. Ayres & Co., merchandise.....	6 91
" 30.	To Aquos Distilled Water Co., merchandise..	1 50
" 30.	To Balke & Krauss Co., merchandise.....	6 70
" 30.	To H. E. Barnard, expense.....	169 80
" 30.	To Wm. B. Burford, printing and stationery..	253 70
" 30.	To Bausch & Lomb Optical Co., merchandise.	48 38
" 30.	To Elmer & Amend, merchandise.....	6 10
" 30.	To Evans & Fulton, merchandise.....	120 56
" 30.	To Adams Express Co., services.....	9 54
" 30.	To American Express Co., services.....	21 60
" 30.	To United States Express Co., services.....	5 65
" 30.	To Freaney Bros., plumbing.....	20 00
" 30.	To Indianapolis Sanitary Co., garbage disposal	10 00
" 30.	To Pettis Dry Goods Co., merchandise.....	1 58
" 30.	To Pittman-Myers Co., merchandise.....	148 15

Sept. 30.	To Romadke Leather Goods Co., merchandise	\$9 50
" 30.	To E. H. Sargent & Co., merchandise.....	300 21
" 30.	To Dr. J. P. Simonds, expense.....	6 90
" 30.	To Dr. Will Shimer, expense.....	4 50
" 30.	To G. E. Stechert & Co., journal.....	5 50
" 30.	To W. K. Stewart Co., books.....	89 55
" 30.	To Vounegut Hardware Co., merchandise....	3 10
" 30.	To Daniel Stewart Co., merchandise.....	6 85
" 30.	To A. W. Bruner, expense.....	74 50
" 30.	To B. W. Cohn, expense.....	42 15
" 30.	To F. W. Tucker, expense.....	61 65
" 30.	To John Owens, expense.....	63 40
" 30.	To Dr. J. P. Simonds, salary	166 67
" 30.	To Dr. Will Shimer, salary.....	100 00
" 30.	To Dr. Ada Schweitzer, salary.....	100 00
" 30.	To Mabel J. Abraham, salary.....	38 46
" 30.	To Robert P. Johnson, salary.....	75 00
" 30.	To J. H. Brewster, salary.....	116 66
" 30.	To Cullen Thomas, salary.....	25 00
" 30.	To J. J. Hinman, salary.....	30 00
" 30.	To John Owens, salary.....	100 00
" 30.	To F. W. Tucker, salary.....	100 00
" 30.	To Goldine Grove, salary.....	50 00
Total, fourth quarter.....		<hr/> \$6,571 35
Appropriation		\$14,000 00
Expense, first quarter.....		\$2,070 51
Expense, second quarter.....		2,294 00
Expense, third quarter.....		3,054 60
Expense, fourth quarter.....		<hr/> 6,571 35
Total expense.....		<hr/> 13,990 46
Balance reverting to general fund.....		<hr/> \$9 54

INDIANA STATE BOARD OF HEALTH—LABORATORY OF PURE FOOD AND DRUGS.

For Fiscal Year October 1, 1908, to September 30, 1909.

1908.

Oct. 9.	To H. E. Barnard, expense.....	\$69 41
" 31.	To H. E. Barnard, expense.	8 07
" 31.	To B. W. Cohn, expense.....	27 79
" 31.	To A. W. Bruner, expense.....	68 49
" 31.	To F. W. Tucker, expense.....	98 75
" 31.	To John Owens, expense.....	69 31
" 31.	To H. E. Barnard, salary.....	208 33
" 31.	To H. E. Bishop, salary.....	116 67

Oct.	31.	To Ivy L. Miller, salary.....	\$100 00
"	31.	To Will D. McAbee, salary.....	50 00
"	31.	To Mrs. Nellie M. Coney, salary.....	50 00
"	31.	To Edith Hoffman, salary.....	50 00
"	31.	To Phillip Brodus, salary.....	45 00
"	31.	To B. W. Cohn, salary.....	100 00
"	31.	To A. W. Bruner, salary.....	83 33
"	31.	To F. W. Tucker, salary.....	83 33
"	31.	To John Owens, salary.....	83 33
Nov.	7.	W. H. Bass Photo Co., merchandise.....	1 25
"	7.	To Aquos Distilled Water Co., merchandise.	3 00
"	7.	To Fox Typewriter Co., supplies and repairs.	5 00
"	7.	H. R. Phillips & Co., signs.....	6 70
"	30.	To H. E. Barnard, expense.....	70 55
"	30.	To B. W. Cohn, expense.....	29 13
"	30.	To A. W. Bruner, expense.....	70 93
"	30.	To F. W. Tucker, expense.....	69 33
"	30.	To John Owens, expense.....	65 68
"	30.	To H. E. Barnard, salary.....	208 33
"	30.	To H. E. Bishop, salary.....	116 67
"	30.	To I. L. Miller, salary.....	100 00
"	30.	To Will D. McAbee, salary.....	50 00
"	30.	To Mrs. Nellie M. Coney, salary.....	50 00
"	30.	To Edith Hoffman, salary.....	50 00
"	30.	To Phillip Brodus, salary.....	45 00
"	30.	To B. W. Cohn, salary.....	100 00
"	30.	To A. W. Bruner, salary.....	83 33
"	30.	To F. W. Tucker, salary.....	83 33
"	30.	To John Owens, salary.....	83 33
Dec.	11.	To American Express Co., services.....	7 00
"	11.	To Adams Express Co., services.....	7 70
"	11.	W. H. Bass Photo Co., photos.....	9 00
"	11.	To Central Union Telephone Co., tolls.....	4 75
"	11.	To The Standard Calorimeter Co., mdse....	5 60
"	11.	To L. Strauss & Co., coats.....	19 00
"	31.	To H. E. Barnard, expense.....	65 35
"	31.	To A. W. Bruner, expense.....	72 33
"	31.	To B. W. Cohn, expense.....	61 15
"	31.	To F. W. Tucker, expense.....	77 42
"	31.	To John Owens, expense.....	63 80
"	31.	To H. E. Barnard, salary.....	208 34
"	31.	To H. E. Bishop, salary.....	116 66
"	31.	To I. L. Miller, salary.....	100 00
"	31.	To Will D. McAbee, salary.....	50 00
"	31.	Mrs. Nellie M. Coney, salary.....	50 00
"	31.	To Edith Hoffman, salary.....	50 00
"	31.	To Phillip Brodus, salary.....	45 00
"	31.	To A. W. Bruner, salary.....	83 34
"	31.	To B. W. Cohn, salary.....	100 00

Dec. 31.	To F. W. Tucker, salary.....	\$83 34
" 31.	To John Owens, salary.....	83 34

Total first quarter..... \$3,971 49

1909.

Jan. 8.	To American Toilet Supply Co., laundry.....	\$17 70
" 8.	To Aquos Distilled Water Co., water.....	1 50
" 8.	To Wm. B. Burford, printing and stationery	111 06
" 8.	To Adams Express Co., services.....	2 20
" 8.	To American Express Co., services.....	1 50
" 8.	To The Chemical Engineer, Journal.....	2 00
" 8.	To H. Lieber Co., merchandise.....	8 85
" 8.	To Efrogmson & Wolf (Star Store), mdse..	1 65
" 8.	To Western Union Telegraph Co., services...	1 88
" 31.	To H. E. Barnard, salary.....	208 33
" 31.	To H. E. Bishop, salary.....	116 67
" 31.	To I. L. Miller, salary.....	100 00
" 31.	To W. D. McAbee, salary.....	50 00
" 31.	To Mrs. Nellie M. Coney, salary.....	50 00
" 31.	To Edith Hoffman, salary.....	50 00
" 31.	To Phillip Brodus, salary.....	45 00
" 31.	To A. W. Bruner, salary.....	83 33
" 31.	To B. W. Cohn, salary.....	100 00
" 31.	To F. W. Tucker, salary.....	83 33
" 31.	To John Owens, salary.....	83 33
" 31.	To Cullen Thomas, salary.....	25 00
" 31.	To H. E. Barnard, expense.....	91 89
" 31.	To A. W. Bruner, expense.....	59 83
" 31.	To B. W. Cohn, expense.....	30 40
" 31.	To F. W. Tucker, expense.....	67 54
" 31.	To John Owens, expense.....	87 07
Feb. 27.	To H. E. Barnard, expense.....	40 94
" 27.	To A. W. Bruner, expense.....	72 85
" 27.	To B. W. Cohn, expense.....	29 13
" 27.	To F. W. Tucker, expense.....	79 32
" 27.	To John Owens, expense.....	86 97
" 28.	To H. E. Barnard, salary.....	208 33
" 28.	To H. E. Bishop, salary.....	116 67
" 28.	To I. L. Miller, salary.....	100 00
" 28.	To Will D. McAbee, salary.....	50 00
" 28.	To Mrs. Nellie M. Coney, salary.....	50 00
" 28.	To Edith Hoffman, salary.....	50 00
" 28.	To Phillip Brodus, salary.....	45 00
" 28.	To Cullen Thomas, salary.....	25 00
" 28.	To A. W. Bruner, salary.....	83 33
" 28.	To B. W. Cohn, salary.....	100 00
" 28.	To F. W. Tucker, salary.....	83 33
" 28.	To John Owens, salary.....	83 33
Mar. 16.	To W. H. Bass Photo Co., slides.....	16 00

Mar. 16.	To W. B. Burford, printing and stationery...	\$49 78
" 16.	To Pittman-Myers Co., drugs.....	68
" 16.	To G. M. Merrick, agent typewriter supplies..	1 65
" 16.	To Vonnegut Hardware Co., merchandise..	5 05
" 31.	To H. E. Barnard, salary.....	208 34
" 31.	To H. E. Bishop, salary.....	116 66
" 31.	To Ivy L. Miller, salary.....	100 00
" 31.	To W. D. McAbee, salary.....	50 00
" 31.	To Mrs. Nellie M. Coney, salary.....	50 00
" 31.	To Edith Hoffman, salary.....	50 00
" 31.	To Philip Brodus, salary.....	45 00
" 31.	To Cullen Thomas, salary.....	25 00
" 31.	To A. W. Bruner, salary.....	83 34
" 31.	To B. W. Cohn, salary.....	100 00
" 31.	To F. W. Tucker, salary.....	83 34
" 31.	To John Owens, salary.....	83 34
" 31.	To H. E. Barnard, expense.....	5 37
" 31.	To A. W. Bruner, expense.....	73 90
" 31.	To B. W. Cohn, expense.....	21 22
" 31.	To F. W. Tucker, expense.....	81 94
" 31.	To John Owens, expense.....	77 20
Total second quarter.....		\$4,112 07
Apr. 9.	To American Toilet Supply Co., laundry.....	18 15
" 9.	To Aquos Distilled Water Co., merchandise..	8 80
" 9.	To Wm. B. Burford, printing and stationery.	17 06
" 9.	To Adams Express Co., services 3 months...	7.00
" 9.	To American Express Co., services 3 months	7 18
" 9.	To U. S. Express Co., services three months	1 35
" 9.	To W. Gierke, binding boxes.....	37 60
" 9.	To A. Kiefer Drug Co., merchandise.....	6 90
" 9.	To Sanborn Marsh Elect. Co., repairs.....	1 30
" 9.	To E. H. Sargent & Co., merchandise.....	3 35
" 9.	To Schnull & Co., merchandise.....	23 84
" 9.	To D. Van Nostrand Co., books.....	3 50
" 9.	To Vonnegut Hardware Co., merchandise...	1 65
" 30.	To H. E. Barnard, salary.....	208 33
" 30.	H. E. Bishop, salary.....	116 67
" 30.	To I. L. Miller, salary.....	100 00
" 30.	To Edith Hoffman, salary.....	50 00
" 30.	To Goldine Grove, salary.....	50 00
" 30.	To Philip Brodus, salary.....	45 00
" 30.	A. W. Bruner, salary.....	83 83
" 30.	To B. W. Cohn, salary.....	100 00
" 30.	To F. W. Tucker, salary.....	83 33
" 30.	To John Owens, salary.....	83 83
" 30.	To H. E. Barnard, expense.....	34 43
" 30.	To A. W. Bruner, expense.....	74 39
" 30.	To B. C. Cohn, expense.....	43 16

Apr. 30.	To F. W. Tucker, expense.....	\$68 59
" 30.	To John Owens, expense.....	92 28
May 1.	To C. L. Bartlett, photo slides.....	14 00
" 1.	To Pittman-Myers Co., merchandise.....	103 02
" 10.	To Robt. H. Bryson, P. M., postage stamps..	125 00
" 31.	To H. E. Barnard, salary.....	208 33
" 31.	To H. E. Bishop, salary.....	116 67
" 31.	To I. L. Miller, salary.....	100 00
" 31.	To W. D. McAbee, salary.....	50 00
" 31.	To Edith Hoffman, salary.....	50 00
" 31.	To Goldine Grove, salary.....	50 00
" 31.	To Phillip Brodus, salary.....	45 00
" 31.	To A. W. Bruner, salary.....	83 33
" 31.	To B. W. Cohn, salary.....	100 00
" 31.	To F. W. Tucker, salary.....	83 33
" 31.	To John Owens, salary.....	83 33
" 31.	To H. E. Barnard, expense.....	83 60
" 31.	To A. W. Bruner, expense.....	71 65
" 31.	To B. W. Cohn, expense.....	14 35
" 31.	To F. W. Tucker, expense.....	85 91
" 31.	To John Owens, expense.....	77 82
June 1.	To Bultman & Arnold, services.....	15 75
" 1.	To Wm. B. Burford, printing and stationery.	77 91
" 1.	To Elmer & Amend, merchandise.....	56 50
" 1.	To Adams Express Co., services.....	10 79
" 1.	To American Express Co., services.....	16 00
" 1.	To United States Express Co., services.....	2 15
" 1.	To W. Gierke, binding books.....	9 75
" 1.	To The H. Lieber Co., merchandise.....	6 90
" 1.	To Schnull & Co., merchandise.....	11 56
" 1.	To Standard Calorimeter Co., merchandise..	77
" 1.	To W. K. Stewart Co., books.....	8 00
" 1.	To G. M. Merrick, agt., typewriter supplies..	5 50
" 1.	To Vonnegut Hardware Co., merchandise...	1 00
" 30.	To H. E. Barnard, salary.....	208 34
" 30.	To H. E. Bishop, salary.....	116 66
" 30.	To I. L. Miller, salary.....	100 00
" 30.	To W. D. McAbee, salary.....	50 00
" 30.	To Edith Hoffman, salary.....	50 00
" 30.	To Goldine Grove, salary.....	50 00
" 30.	To Phillip Brodus, salary.....	45 00
" 30.	To A. W. Bruner, salary.....	83 34
" 30.	To B. W. Cohn, salary.....	100 00
" 30.	To F. W. Tucker, salary.....	83 34
" 30.	To John Owens, salary.....	83 34
Total third quarter.....		\$4,158 46
July 31.	To H. E. Barnard, salary.....	\$208 33
" 31.	To H. E. Bishop, salary.....	125 00

July 31.	To I. L. Miller, salary.....	\$116 87
" 31.	To W. D. McAbee, salary.....	60 00
" 31.	To Edith Hoffman, salary.....	50 00
" 31.	To Goldine Grove, salary.....	50 00
" 31.	To Philip Brodus, salary.....	50 00
" 31.	To A. W. Bruner, salary.....	100 00
" 31.	To B. W. Cohn, salary.....	100 00
" 31.	To F. W. Tucker, salary.....	100 00
" 31.	To John Owens, salary.....	100 00
Aug. 31.	To H. E. Barnard, salary.....	208 33
" 31.	To H. E. Bishop, salary.....	125 00
" 31.	To I. L. Miller, salary.....	116 87
" 31.	To W. D. McAbee, salary.....	60 00
" 31.	To Edith Hoffman, salary.....	50 00
" 31.	To Goldine Grove, salary.....	50 00
" 31.	To Philip Brodus, salary.....	50 00
" 31.	To A. W. Bruner, salary.....	100 00
" 31.	To B. W. Cohn, salary.....	100 00
Sept. 30.	To Sanborn-Marsh Electric Co., merchandise.	25 50
" 30.	To H. E. Barnard, salary.....	208 34
" 30.	To H. E. Bishop, salary.....	125 00
" 30.	To I. L. Miller, salary.....	116 86
" 30.	To W. D. McAbee, salary.....	60 00
" 30.	To Edith Hoffman, salary.....	50 00
" 30.	To Philip Brodus, salary.....	50 00
" 30.	To A. W. Bruner, salary.....	100 00
" 30.	To B. W. Cohn, salary.....	100 00
Total fourth quarter.....		<hr/> \$2,755 50
Appropriation		\$15,000 00
Total for first quarter.....		\$3,971 49
Total for second quarter.....		4,112 07
Total for third quarter.....		4,158 46
Total for fourth quarter.....		<hr/> 2,755 50
		<hr/> 14,997 52
Amounting reverting to general fund....		<hr/> \$2 48

RECAPITULATION.

Appropriations.

Secretary's salary (specific).....	\$3,000 00
Chief Clerk's salary (specific).....	1,500 00
Appropriation State Board of Health Office.....	10,000 00
Appropriation Laboratory of Hygiene	14,000 00
Appropriation Laboratory of Pure Food and Drugs..	15,000 00
Total	\$43,500 00

Expenditures.

Secretary's salary (specific).....	\$3,000 00
Chief Clerk's salary (specific).....	1,500 00
Office Expenses.....	9,998.92
Laboratory of Hygiene, expenses.....	13,990 26
Laboratory of Pure Food and Drugs.....	14,997 52
Total	\$43,486 70
Total amount reverting to general fund.....	\$13 30

TRANSACTIONS OF THE BOARD.

SPECIAL MEETING.

NOVEMBER 5, 1908.

Present: Drs. Tucker, Wishard, McCoy, Davis, Hurty.

Called to order by President Tucker, at 12:30 p. m.

The President stated the object of the meeting as follows:

To listen to and consider the report of the Tuberculosis Hospital Commission, and make such recommendation as the Board might determine. To consider Dr. Knabe's resignation, to consider the petition of the American Sheet and Tin Plate Company for permit to discharge waste from their various plants into streams, and to pass upon such other business as the Board might decide.

Dr. Henry Moore, chairman of the "Tuberculosis Hospital Commission," presented to the Board the report of the commission to the Governor and General Assembly. It was read by the Secretary, and after a few changes, which were willingly accepted by Dr. Moore, the same was given the approval of the Board and heartily recommended to the Governor and General Assembly.

Dr. Helene Knabe presented her resignation as acting superintendent of the Bacteriological and Pathological Department of the State Laboratory of Hygiene. Upon motion of Dr. McCoy, seconded by Dr. Davis, the resignation was accepted to take effect November 15, 1908.

Dr. J. P. Simonds, of St. Louis, was appointed superintendent, at a salary of \$2,000 per annum, he to begin his services by December 1st.

The following petition was read and action postponed:

ELWOOD, IND., NOV. 4, 1908.

To The Honorable State Board of Health, Indianapolis, Indiana:

Gentlemen—The undersigned respectfully petitions your Honorable Board to grant and issue to them a Permit, permitting sewerage running from their Anderson Works into the Beal Ditch; from there into the Carter Ditch and from the Carter Ditch into Killbuck Creek; also from the Amer-

ican Works located at Elwood, Indiana, Permit for sewerage to empty from their plant into Little Duck Creek; also, Midland Works of said Company at Muncie, Indiana, to empty refuse water and sewerage into Buck Creek; also, the Moorewood Works of said Company of Gas City, Indiana, to empty waste water and sewerage into the Mississinewa River.

We would be pleased to have this Permit cover the time during the years 1907, 1908 and 1909.

Respectfully,

AMERICAN SHEET AND TIN PLATE CO.

By CAMPBELL & CALL, its Attys.

The Secretary reported that the Chicago health authorities had excluded from Chicago the milk from several dairies in Lake County, on account of typhoid fever existing at the same. They had also excluded the milk from two dairies because of tuberculosis. The Secretary further reported he had ordered Mr. Frank Tucker, inspector, to proceed to Lake County, to inspect all dairies and to take such action as the findings might warrant.

After discussing the facts about milk exclusion on account of tuberculosis, the following resolution was adopted, and ordered sent to the State Veterinarian:

Resolved, That the State Veterinarian be requested to make tuberculin tests of the dairy cattle in Lake County at the State's expense; to require, if possible, the slaughtering of all milk cows found to be afflicted with tuberculosis, and to make a report of his work to the State Board.

There being no more business, the Board adjourned.

SPECIAL MEETING.

DECEMBER 30, 1908.

Called to order 2 p. m., by President Tucker.

Present: Tucker, Davis, McCoy, Wishard, Hurty.

The President stated the object of the meeting to be, to consider the suit brought in the United States Court by Curtice Bros., of Rochester, N. Y., and Williams Bros., of Detroit, Mich., asking for an injunction to prevent the State Board of Health from enforcing that part of Rule 18 which forbids the use of benzoate of soda as a food preservative. And a further object of the meeting was to consider such legislation as might be deemed proper to present to the Sixty-sixth General Assembly, and to consider such other matters as might be brought up.

The complaint of the Curtice Bros., of Rochester, and Williams Bros., of Detroit, to the United States Court was read. After consideration no action was taken, as the Deputy Attorney-General said there was nothing to do but for him to answer it, which he was preparing to do.

The amendments to the health law were discussed. It was decided to recommend to the legislature again the same amendments which were offered to the Sixty-fifth General Assembly.

The bill of Senator M. T. McCarty, which was written by the Secretary, and which refers to school sanitation and the medical inspection of school children, was read and discussed. The bill was approved.

The bill of Hon. H. L. McGinnis, concerning the prevention of stream pollution, was read and discussed and finally approved.

REGULAR QUARTERLY MEETING, JANUARY 8, 1909.

The business considered of the fourth calendar quarter of 1908, and the first fiscal quarter of the fiscal year ending September 30, 1909:

Present: Drs. Tucker, McCoy, Wishard, Davis, Hurty.

Minutes of the last regular meeting held October, 1908, and special meetings held November 5, 1908, and December 30, 1908, read and approved specifically in each part and as a whole.

Secretary's report read and ordered spread of record.

REPORT OF SECRETARY FOR QUARTER ENDING DECEMBER 31, 1908.

It is a pleasure to be able to report that the year 1908 has ended with health conditions improved in Indiana over those of the preceding year. Health officers everywhere, have taken a deeper interest than ever before and this is true, also, of the medical fraternity as a whole. Various county medical societies have passed resolutions of confidence in the State Board of Health, and have invited your Secretary to address them. The following medical so-

cieties have extended special invitations to the State Board of Health for information concerning the health law and the health rules and the policies of the State Board.

Your Secretary was made guest of honor at the annual meeting of the Ninth Councillor District Medical Society, which was held at Crawfordsville, Ind., November 10, 1908. At that meeting the Secretary read a paper entitled: "The Medical Inspection of School Children." In this paper was set forth the importance and necessity of medical inspection and also the importance and necessity of sanitary schoolhouses. All the points contended for were heartily indorsed by the said association.

The Sixth Councillor District Medical Society met at Rushville on December 3. The Secretary was the guest of the society and was invited, as in the prior instance, to give full information of the work of the State Board of Health and its policies and, in addition, to read a paper entitled, "The Future Hygiene." The society cordially indorsed, by resolution, the recommendations of the paper, and in addition, unanimously passed the following resolutions:

WHEREAS, It is a fact well known in medicine—that at least forty percentum of school children suffer from and are retarded in their studies on account of defects of sight and hearing, and other physical defects, and on account of mild attacks of infectious diseases and other forms of illness, and

WHEREAS, Medical inspection is the only means by which the little sufferers can be discovered and relieved, therefore, be it

Resolved, That the Sixth Councillor District Medical Society in Session December 3, 1908, at Rushville, Indiana, urges the authorities of the state to adopt and enforce said Medical Inspection of school children in order that the child life of the state may be conserved to our honor and profit.

The Allen County Medical Society met November 17th, and your Secretary was invited to take part in the program, and in the evening to deliver, under the auspices of said society, a popular lecture.

On November 28th the Jennings County Medical Society met at North Vernon, and at the request of the president, the work and policies of the State Board of Health were explained by the Secretary and, in addition, a paper was read upon the hygienic management of scarlet fever. The same evening the Secretary delivered an address before the Teachers' Association, the medical society attending.

On November 9th, at Greensburg, the Secretary, by invitation,

met with the Decatur County Medical Society. The Secretary read a paper upon "Diphtheria," and recent discoveries in the preparation of diphtheria antitoxin.

In the evening, under the auspices of the medical society, a public lecture was delivered upon "The Care of School Children."

Dr. J. P. Simonds, who in November accepted the position of superintendent of the Pathological and Bacteriological Laboratory, commenced work December 1. He retained all of the help which he found there. Under his supervision, to this date, the work of that department has proceeded successfully. On December 3 he attended the meeting of the Sixth Councillor District Medical Society at Rushville with the Secretary, to make the acquaintance of the physicians of that district. He was cordially received and invited to address the society.

STATISTICS, OFFICE AFFAIRS.

The vital statistics for the quarter have been carefully collected, tabulated and analyzed. It is certainly true that the statistics are more thoroughly collected each quarter, and this is accomplished by continually following up the matter. This makes necessary the writing of many letters. Strong effort has been put forth to secure accurate statements of causes of death, according to the international classification system. Every certificate of death which has upon it an indefinite term is inquired about. In all, something like one hundred letters are written each month in regard to such matters.

The securing of the names of newborn children is a matter of great importance, yet at this time we must report that a very large percentage of our birth certificates are filed without a given name for the child. For the first few months of the year, whenever a certificate of birth was received and the name of the infant not given, a letter was addressed to the mother asking her to supply the name. This letter also informed the mother of the very great importance of reporting the name of the child. The expense was found to be considerable, something like \$100 a month, simply to secure the names of newly born infants, where parents had neglected to name them at the time the report was made. It required considerable time of one clerk, also required 2 cents to carry the letter and 2 cents was enclosed for a reply. The plan worked admirably, for it brought the State Board of Health into contact with the mothers, and they appreciated the efforts of the Board to help

them. It is to be deeply regretted that we have not sufficient money with which to print a pamphlet in regard to the care of infants, and to send one of these to the mother in every instance where a child is born. This would require something like 75,000 pamphlets annually, which would mean postage of \$750, and coupled with this the other expense of obtaining names, would in all make a sum for proper work in collection of birth reports of about \$2,000. Your Secretary calculates this would be a work of great value, and it should be permitted by the legislature. Transcripts of birth and death certificates are required daily, and thus the people are becoming acquainted with the very great value to them personally of vital statistics.

TYPHOID FEVER COMPARISON FOR FOURTH QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
October, 1907.....	562	144	73
October, 1908.....	464	129	72
November, 1907.....	440	76	60
November, 1908.....	441	44	55
December, 1907.....	318	69	47
December, 1908.....	242	76	53
Total, 1907.....	1,320	289	180
Total, 1908.....	1,147	249	180

SMALLPOX COMPARISON FOR FOURTH QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
October, 1907.....	75	0	7
October, 1908.....	54	0	10
November, 1907.....	107	0	14
November, 1908.....	56	0	10
December, 1907.....	207	0	18
December, 1908.....	128	2	23
Total, 1907.....	389	0	39
Total, 1908.....	238	2	43

VISITS.

Thirteen visits were made during the quarter, as follows:

October 15th—Earl Park.
 October 18th—Noblesville.
 October 27th—Marion.
 October 28th—Mulberry.
 October 31st—Dana.
 November 9th—Greensburg.
 November 12th—Crawfordsville.

November 17th—Ft. Wayne.
 November 19th—Union City.
 November 25th—Jeffersonville.
 November 27th—Crawfordsville.
 November 28th—North Vernon.
 December 16th—Lafayette.

EARL PARK: Visit made October 15th. A severe epidemic of diphtheria broke out at Earl Park the first week in October. The first case was an adult, who died. The patient, a man, had been to Chicago, and returned with a sore throat. A correct diagnosis was not made until after death. From this case the epidemic spread. Finally it got into the schools and two children died. At the earnest solicitation of the health officer and the town board, I visited Earl Park, and with the health officer made inspection of the schools and visited several homes which were stricken with diphtheria. In the evening I addressed an audience of about 200, and here was told the whole story of diphtheria and its prevention. The town board authorized the employment of help by the Town Health Officer.

Accordingly a medical student, a senior, by the name of J. H. Davis, was given a commission as deputy state health officer and sent to Earl Park, he to be paid by the town board. He was of great assistance, as fully acknowledged in the letter from Dr. McMahon. He was skilful with the microscope and was supplied with an abundance of swabs and culture material, and made diphtheria examinations, without sending them to the laboratory. In all, 478 such examinations were made and many cases of incipient diphtheria discovered. By November 8th the epidemic was entirely overcome, with a total of three deaths and 88 cases.

NOBLESVILLE: Visit made October 18th. On this date, I visited Noblesville, together with Dr. J. P. Simonds, to meet President Tucker. The Board had ordered that the candidate for superintendency of the Laboratory of Hygiene, should be employed by the President and the Secretary, and it was for the purpose of holding a conference upon this subject, and meeting with the President, that the trip was made to Noblesville. After due consideration of all the points concerned, Dr. Simonds was employed, to begin his work December 1st.

MARION: Visit made October 27th. This visit was made in conjunction with Mr. H. E. Barnard, chemist, in order to study the

water supply of the Marion Soldiers' Home. This was upon invitation from Col. George Steele, the Governor of the Institution. Mr. Barnard's report gives a full account of the quality of the waters with their analyses. With the assistant superintendent and the engineer, Mr. Barnard and myself made a complete inspection. The supply of the institution is now secured from wells which are driven in a field near the river. Some of these wells were found to be polluted.

As before said, Mr. Barnard's reports will give full accounts.

MULBERRY: Visit made October 28th. A severe epidemic of diphtheria broke out in Mulberry early in October. It created much alarm and much newspaper comment. Mulberry is not incorporated and has no health officer, and, therefore, came under the jurisdiction of the county. Dr. Ruddell appealed to the State Board for deputies and help. After he had made many visits to Mulberry, he appointed a deputy there. Dr. Knabe was sent to Mulberry to take cultures and to render all aid possible. She did a good work, but the diphtheria continued, because the people were not impressed with the importance of quarantine, and the very great importance of searching out the incipient cases. It was upon invitation of the county health officer and business men of Mulberry, that the Secretary made his visit. Upon arrival he met a large body of business men in the First National Bank of the place and the President of the Bank was made presiding officer of the meeting. The Secretary made a plain statement in regard to the situation and what must be done, if diphtheria was to be rooted out. Suggestions, being of the usual character need not be repeated here, were heartily adopted by the business men there gathered, and they promised they would be carried into effect. A medical student was employed by the business men and was made a Deputy State Health Officer, and commenced the work of fighting the disease under the directions of Dr. Ruddell. Control was very quickly secured. The cases numbered over 100 and the deaths numbered one.

DANA: Visit made October 31st. The visit was made upon invitation to address the Vermillion County Teachers' Association upon the subject of "Medical Inspection of School Children" and "School Hygiene." Upon arrival, I found the physicians had also gathered in considerable number, to attend the exercises. The address was made in the afternoon, and the large church was entirely full. The teachers and physicians present adopted resolutions commending the work of the State Board of Health and also

commending and supporting all rational measures intending to secure better schoolhouses and to secure the medical inspection of school children.

GREENSBURG: Visit made November 9th. Upon invitation of the Decatur County Medical Society, I visited Greensburg and read a paper upon "Scarlet Fever and Its Prevention," and under the auspices of the society, at night addressed an audience upon the subject of the "Medical Inspection of School Children." There was good attendance in both of these instances, and resolutions of thanks were adopted. I believe the visit was attended with good results for the public health cause.

CRAWFORDSVILLE: Visit made November 10th. The visit to Crawfordsville on this occasion was for the purpose of attending the meeting of the Ninth Councillor District Indiana State Medical Association. I had the distinction of being the guest of honor upon this occasion. My paper, which was read before the meeting, was upon the subject of the "Medical Inspection of School Children and School Sanitation." A resolution of confidence in the State Board of Health and also approving medical inspection of school children, was passed. The attendance upon the medical meeting was 78, and every county in the district was represented.

FT. WAYNE: Visit made November 17th. On this occasion I was the guest of the Allen County Medical Society. Upon special invitation I read a paper upon "The Future Hygiene," which was kindly received and a vote of thanks given. In the evening, under the auspices of the Allen County Medical Society, a public lecture was given to a general audience, upon the subject of medical inspection of school children. I believe that this visit was attended with good results for the public health cause.

UNION CITY: Visit made November 19th. The object of this visit was to address the National Council of Women, which was holding its annual meeting at Union City. My subject was "The Care of the Public Health Is the First Duty of the Statesman." This famous utterance of Disraeli was taken, as indicated above, as my subject. A very large audience, completely filling the church was present. A rousing vote of thanks was offered for my address, and I believe good resulted to the public health cause from this visit.

JEFFERSONVILLE: Visit made November 25th. This visit was made upon invitation from the superintendent of the Indiana Reformatory, and the City and County Health Officers at Jefferson-

ville. It was because of an outbreak of typhoid fever. Upon arrival at Jeffersonville, a thorough inspection was made. At that time there had been one death from typhoid fever in the Reformatory and there were 27 cases. In the city there had been three deaths and there were probably 80 cases. A thorough inspection led finally to the conclusion that the water from the Ohio River, which is pumped into the mains of Jeffersonville, to some degree, was the carrier of the infection. Jeffersonville has two waterworks plants, one of them called the "new plant," which secures its entire supply from wells. The other plant, called the "old plant," secures water from the river. The first plant pumps about 1,300,000 gallons daily, and the second 450,000 gallons. When the water authorities were asked to discontinue the supply from the river and to flush out the mains with pure water from the wells, the reply was, "They could not do so without violating their charter." Upon consultation with the city authorities, it was found that the charter required the water company to maintain a constant pressure of 60 pounds each square inch in the mains. This pressure could not be maintained by the new plant, because it was not large enough and the engines were not strong enough. Hence, the necessity of supplementing the pressure of the old plant, which furnished river water only. After thorough discussion and argument with the lawyers, it was arranged that the city would not deem the charter of the water company forfeited if the pressure was lowered to 40 pounds and the mains flushed from the old water which they had contained. Finally, all of this was accomplished and the river supply cut out, thus removing the source of typhoid infection. Several analyses had shown that the deep well supply was faultless, and several analyses of the river had shown that every drop of the river water contained colon bacilli.

Note.— Since writing the above it is to be noted that the keeping out of the river water from the public supply was immediately followed by a lowering of the typhoid sick ratio. Seven persons in all died with the disease at the Reformatory and three in the city of Jeffersonville.

CRAWFORDSVILLE: Visit made November 27th. The visit made to Crawfordsville on this date was to attend court and obey a subpoena to testify in a drainage matter. The questions asked were entirely hypothetical and seemed to satisfy and inform the court.

NORTH VERNON: Visit made November 28th. The object of this visit was to meet with the Jennings County Medical Society

and to deliver an address to the Teachers' Institute. I did not read a paper before the medical fraternity, but did speak upon the work of the Board of Health and made a plea for cooperation on the part of the physicians of the State. A resolution was passed by the society offering its help, and also a resolution was passed by the society endorsing the work of the State Board.

Before the Teachers' Institute I spoke upon the subject of "School Hygiene and the Medical Inspection of School Children." The address was well received and a vote of thanks offered.

RUSHVILLE: Visit made December 3d. This visit was to attend the annual meeting of the Sixth Councillor District Indiana State Medical Association. This district includes the following counties: Shelby, Hancock, Henry, Rush, Fayette, Wayne, Union and Franklin. All of these counties were represented. My paper had been read before and was the one entitled "The Future Hygiene." I also spoke before the society upon the subject of "School Hygiene" in discussing the paper of Dr. T. Henry Davis upon the same topic. The meeting was certainly a success, and ended with a banquet in the evening, at which opportunity was again given me to present the work of the State Board of Health concerning the enforcement of the pure food law.

LAFAYETTE: Visit made December 16th. The Lafayette Anti-Tuberculosis Society, a strong and vigorous organization, invited me to deliver a public lecture upon the "Economics of Tuberculosis." On the evening mentioned a large audience greeted me in the auditorium of the Y. M. C. A. I endeavored to show to the listeners the enormous cost of tuberculosis to the people, and to impress upon them all the economic features attendant upon the Great White Plague.

AN APPROVED DISINFECTANT FOR EMBALMING.

In accordance with the directions of the Board given at the last regular meeting the Secretary has made an investigation concerning an approved disinfectant for embalming. I found that the Minnesota State Board of Health has gone deeply into the matter, and in fact practically settled the question. I therefore recommend that the Board adopt the following well-tried formula, which has been thoroughly tested by the Minnesota State Board of Health and by the National Funeral Directors' Association:

APPROVED DISINFECTANT.

Formuldehyde	11 lbs.
Glycerine	4 lbs.
Borax	2.5 lbs.
Boric acid	1 lb.
Saltpetre	2.5 lbs.
Eosin (1 per cent. solution)	1 oz.
Water to make	10 gals.

The report upon the approved disinfectant, after discussion, was adopted and the formula as above written was also adopted.

APPLICATION FOR PERMIT TO DISCHARGE WASTE INTO
DUCK CREEK AT ELWOOD.

AMERICAN SHEET AND TIN PLATE COMPANY.
Office at American Works.

THOMAS O'BRIEN,
District Manager.

Elwood, Ind., December 29, 1908.

State Board of Health, Indianapolis, Indiana:

Gentlemen— We, the undersigned, respectfully petition your honorable board to grant and issue to us a permit to flow and discharge our sewerage from American Works, located at Elwood, Indiana, into Duck Creek; also the waste waters from our roll pits, engine pits, boshes and the overflow water from the swill tanks of our picklers. The calculated quantity of water we empty into Duck Creek per day, when the Factory is in full operation, amounts to 400,000 gallons. The swill water from our picklers contains a very small quantity of sulphate of iron, such as is washed off the plates in the swilling operation. We do not ask permission to empty our spent pickle into Duck Creek. The spent pickle at American Works is emptied into a private sewer and delivered to our sulphate of iron department, from which we manufacture several hundred tons of sulphate of iron per month. The following is a list of the names of some of our customers that use this material for water purification:

City of St. Louis, Chain of Rocks Station.
City Water Works Company, East St. Louis, Ill.
Jefferson City Water Works Company, Jefferson City, Mo.
Public Water Company, Ottumwa, Iowa.
Shreveport Water Works, Shreveport, La.

We claim that our sewerage can be safely discharged into the stream without injury to the public and that the waters flowing from our sewer is beneficial by adding to the volume and a disinfecting influence on the water in the main body of the creek, which contains the sewerage from the city, and that our sewerage does not cause any unsanitary condition.

Yours very truly,

AMERICAN SHEET AND TIN PLATE COMPANY,

THOMAS O'BRIEN,
District Manager.

After reading the above application Mr. O'Brien, district manager of the company, and Mr. E. R. Call, attorney, addressed the Board, presenting arguments and facts in favor of granting a permit. After discussion, upon motion of Dr. McCoy permit was granted as follows:

January 8, 1909.

Whereas, The American Sheet and Tin Plate Company, a corporation owning a tin-plate plant at Elwood, Madison County, Indiana, has heretofore filed with the Secretary of the State Board of Health of Indiana its verified application in writing, asking a permit to discharge into a stream in said State, known as Duck Creek, certain liquid wastes from the rolls, engine pits and boshes, also "spent pickle" and the sewage from the plant, and showing in such application that said stream was, at the time of filing and making such application, and at various other times, was at such stage that the wastes, pickle and sewage might be safely discharged into said stream without injury to the public; and

Whereas, Said State Board of Health has duly inspected said stream above, at and below the point where said wastes enter Duck Creek and has found and finds that said wastes may, for the period here below fixed, be safely discharged into said stream without injury to public health, as aforesaid; and furthermore, finding that said wastes, "spent pickle" and sewage will not cause any unsanitary conditions;

Now, therefore, said State Board of Health hereby grants and issues this, its written permit, hereby granting permission to said American Sheet and Tin Plate Company, to flow and discharge the wastes from the rolls, engine pits and boshes, also "spent pickle" and sewage of its plant at Elwood, into Duck Creek, for a period extending from the date hereof, to the first of January, 1910.

This permit given this day, January 8th, 1909, by the State Board of Health, all members being present and concurring.

REELSVILLE SCHOOLHOUSE DISTRICT NO. 8, WASHINGTON
TOWNSHIP, PUTNAM COUNTY.

CORRESPONDENCE.

REELSVILLE, Ind., May 25, 1908.

Dr. J. N. Hurty, Indianapolis, Indiana:

Dear Sir—About April 15th I gave to Dr. King, Secretary Board of Health, Putnam County, Indiana, a petition signed by the patrons of School No. 8, in Washington Township, Putnam County, to condemn an old and dilapidated school house, built 45 years. He said that he would go and see the house. Last week I saw him again. He told me that he had sent the petition to you. I would like to know if you have it. An answer from you will be appreciated.

Yours truly,

JACK HUFFMAN.

REELSVILLE, Ind., April 14, 1908.

To J. M. King, Secy. Putnam Co. Board of Health, Greencastle, Indiana:

Sir—We, the patrons of school District No. 8, in Washington Township, Putnam County, Indiana, do hereby complain that said schoolhouse No. 8, is unsanitary and not a fit place to send pupils of said district, and hereby request that you make an investigation as to the sanitary condition of said building.

Jack Huffman,
Curtis T. Craft,
Monroe Senter,
John Dunn,
Clarence Wright,
F. Barnett,

James Barnett.
Albion Aker.
George Rissler.
John F. Rissler.
Morton L. Rissler.

Report of inspection of Reelsville Schoolhouse, District No. 8, Washington Township, Putnam County, inspected January 4, 1909, by John Owens.

Site.—Low place on a high, wind-swept hill, one-third acre, no trees, high weeds, no well or closets, coal shed used for various purposes; frame building, old shingle roof.

Building.—Two feet from ground, no foundation; set on stone at corners; weatherboarding off in places; 24x20 feet. Six windows 3x4 feet, three on north and three on south, nailed in loosely; large cracks about the frames. Four hundred and eighty feet floor space; volume of room 4040 feet. Room for 17 pupils; actual number in attendance less than ten. School has been forfeited on account of low attendance, but the trustee is perhaps disposed to hold school any way. Seats old-fashioned, double, two rows, various sized, badly "scarred with the jack-knife's carved initial," painted boards for blackboards, very rough and poor, between windows and in front; paper yellowish brown, highly figured, old and dropping off in places; stove flue bad, much danger of fire; poor floor, one door in east (front) end of room and opening outward, 36 square feet of light on north, same amount on south; no shades; 28 square feet floor space to each pupil. Window area $1/6.8$ of floor space. Pupils carry water half mile or more in bucket and for privies use a neighboring corn field and the coal shed.

The petitioners represent some of the largest taxpayers and are very anxious to have this matter looked into fully.

After consideration of all evidence the following order of condemnation was passed:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Reelsville, District No. 8, Washington Township, Putnam County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils and also interferes with their efficiency, therefore, it is

Ordered, That the said schoolhouse at Reelsville, District No. 8, Washington Township, Putnam County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after May 1, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein, after the date above mentioned, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health January 8, 1909.

BRUCEVILLE SCHOOLHOUSE, DISTRICT No. 7, KNOX COUNTY, IND.

CORRESPONDENCE.

Indiana State Board of Health, Indianapolis, Indiana:

Gentlemen—Enclosed is petition with the required number of signers. I think I could have secured forty signers had I taken the time, but I thought ten enough.

I think there will be no serious opposition to a new house. We want a building sufficient for a township commissioned high school. I hope the Board will find it possible and convenient to take action soon, for the present school conditions certainly threaten the health of the children.

I heartily agree with you in thinking that the legislature should furnish an adequate number of physicians to look after the health of the State. The territory of Indiana is far too great for one man. I know our representative very well, and I shall use all the influence I have to influence him to vote for the bill asking for adequate supervision of the public health of the State.

Certainly this is a matter of vast present and future importance. If I can aid in any way to correct the evils you wrote about, I shall be glad to do so.

Respectfully yours,

D. McCARVER.

Report of inspection of School No. 7, Bruceville, Knox County, Indiana, December 29, 1908, by Dr. John Owens:

Site.—High, well-drained, 1 1/2 acres, building near center. A good many shade trees.

This town is in the old French survey, and the lines of the compass are not quite true. North is slightly northeast, etc.

Building.—Is brick, built in 1873. Wells, privy way under windows. Two stories, four rooms, heated by hot air furnace. Iron roof. Very small basement. Building rests on ground at north, three feet above at south. Ventilating ducts on same side as hot air inlets, near floor. Hot air enters seven feet above floor. Furnace works badly in windy weather. Walls in all rooms badly papered, old and dirty, cracked in places. Windows terminate five feet from ceiling. Floors in all rooms in fairly good condition. Light from all directions. Thin wooden wall between east and west half of building. Very shaky when rooms are full of people.

Vestibule.—Doors are double and swing outward. Main stairway is five feet and side stairways are three feet wide. Ninety pupils come down these stairways, and the one in the end is quite near the furnace below, the floor separating. Two landings, 3x3, on each stairway and one 3x5; four landings in all. Size of vestibule, 18x12 feet.

Ground Floor.—Sixty seats, all sizes, single; cut up. Pupils face north. Sixteen-foot ceiling, window 16 square feet light. Walls bad, sagging. Each pupil has 22 feet floor space, or 360 cubic feet of volume. Window area one-ninth of floor area. Light from west, north and south. Blackboards on west and north.

Pupils face west. Forty seats, double, old and cut up, all sizes. Floors good, paper on walls old and dirty. Walls near partition cracked. Sixteen-foot ceiling, window space 16 square feet to window. Each pupil has 22 square feet area and 360 cubic feet space. Window area 1% floor area. Light from east and south. Blackboards on west, south and east.

Room Upstairs.—Sixty seats, pupils face north. Light north, west and south. Sixteen-foot ceiling. Walls bad, sagging near partition. Floors O. K. Seats, single, badly cut up. Blackboards north and west sides. Fifteen square feet floor space to pupil. Window space one-tenth floor space.

Room Upstairs.—Pupils face south, 40 seats, bad walls. Light from northeast and south. Blackboards south and east. Window area two twenty-fifths of floor space. Each pupil has 22 square feet of floor space.

After full consideration the Board adopted the following proclamation of condemnation:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Bruceville, Knox County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That the said schoolhouse at Bruceville, Knox County, Indiana, is condemned for school purposes and shall not be used for said school purposes after May 1st, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health January 8, 1909.

Report of inspection of Schoolhouse at Edwardsport, Knox County, Indiana, District No. 5, Vigo Township, December 22, 1908, by John Owens:

Site.—On a hill, intersection of Third and Carlisle streets. Centrally located.

Elevation.—High ground, slightly uneven, well drained, cinder walks, platform badly broken.

Erected 1886. Out buildings and closets in bad condition; no sewage system; open vaults used. Water carried into rooms in buckets and drinking cups at well and in rooms.

The building is of soft brick, two corners are shattered, and there are cracks in outside wall under windows. The structure is two stories in height and the roof is pressed metal in imitation of slate. There is no basement and the lower floor is approximately one and one-half foot from the earth. The building is heated by stove throughout and is some attempt at ventilating by stovepipe ducts. These enter through the windows, drop to the floor, pass over the stove, thence up along the pipe to a point about seven feet from the floor. It is not known how effective this system is.

The primary room is on the southeast, ground floor. Blackboards in this room on west, north and east. Light from east and south. Seats of one size, fair condition. Floors fair, walls dark olive green, ceiling light brown. Pupils face west. Stove heat. Thirty-six pupils, 75 square feet of light; 756 square feet of floor space; 9,072 cubic feet in room. All windows in building have eight lights 16 inches by 24 inches or admit a fraction over 15 square feet of light. Twelve-foot ceiling in all rooms downstairs.

Second Room.—Grades 2 and 3: Seats single, face south, fair condition, even size. Floor fair condition, olive green paper on walls, light brown ceiling, pink border. Stovepipe ventilator, 12-foot ceiling.

Forty-five pupils, 75 square feet of light; 756 square feet of floor space; 9,072 cubic feet in volume of room. Pupils face south. Blackboards on south, east and north. Light north and east.

Grades 4 and 5: Pupils face north, light from east, south and west. Seats single, all same size, fair condition. Fair floors, olive green walls, brown figured ceiling. Blackboards north, east and west, between windows. Stove heat, 12-foot ceiling. Forty pupils, 105 square feet light; 792 square feet floor space; 9,504 cubic feet in room.

Grades 6 and 7: Blackboards east, north and south. Light from west, north and east. Pupils face east. Seats even size, fair condition, single. Floors fair. Stove heat, stovepipe ventilator. Walls dark olive, light brown ceiling, pinkish border, 12-foot ceiling. Forty pupils, 90 square feet light; 693 square feet floor; 8,316 cubic feet in room.

From the first floor, two five-feet stairways lead to a second floor—one on north, and one on south. Half way up and at the turn, is a large landing 6 feet by ten feet. The hall is as follows: Ceiling is cracked plaster, 15 feet high and broken off in many places. Walls bad, scarred and written over. Eighth Grade, First High school: Stovepipe ventilator, 36 seats, all of a size, 15-foot ceiling. Dark olive paper on walls, light brown on ceiling. Pupils face east. Light from east, north and west. Blackboards on east, north and south. Stove heat, seats and floors fair. 36 pupils, 90 square feet of light. 699 square feet of floor space; 10,265 cubic feet of room space. Cellings are 15 feet high upstairs.

High School: Students face north. Light from east, south and west. Blackboards on north, east and west. Ceiling 15 feet high, walls dark

olive, light brown ceiling, seats fair, single, floors fair, stove heat. Twenty pupils, 90 square feet of light; 792 square feet of floor space; 1178 cubic feet in volume of room.

Students face north. Light from east, south and west. Blackboards on north, east and west. Ceiling 15 feet high. Walls dark olive, light brown ceiling. Seats fair, single, floors fair. Stove heat. Twenty pupils, 90 square feet of light; 792 square feet of floor space; 1,178 cubic feet in volume of room. Plastering in cloakrooms upstairs and down is dirty, cracked and falling off. The large (48 feet by 36 feet) room upstairs and on the east, is not diagrammed, for the reason that it is not in use. It is in bad condition. Bad features about the building are: 1. The building itself, old and cracked. 2. Arrangements as to light. There is eye-strain in every room. 3. Heating and ventilation are both poor and inadequate. 4. Poor toilet rooms. 5. The common drinking cup system used by pupils in every room.

After full consideration the Board adopted the following proclamation of condemnation:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Edwardsport, District No. 5, Vigo Township, Knox County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That the schoolhouse at Edwardsport, District No. 5, Vigo Township, Knox County, Indiana, is condemned for school purposes and shall not be used for said school purposes after May 1st, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health January 8, 1909.

SPECIAL MEETING INDIANA STATE BOARD OF HEALTH, FEBRUARY 11, 1909.

Called to order by President Tucker.

Present: Tucker, McCoy, Davis, Wishard, Hurty.

President stated the object of the meeting to be to consider public health legislation and the report of Lake Michigan Water Commission.

A draft of a bill amending the Health Law was read section by section, discussed and finally approved as a whole. The Secretary was ordered not to make a copy of the bill a matter of record.

The following petition was read:

PETITION.

To the Honorable State Board of Health:

The undersigned, representing the Indiana State Pharmaceutical Association, beg leave to respectfully protest against the ruling of your Board, which provides for the absolute prohibition of benzoate of soda in food products, which includes crushed fruits and fruit syrups for soda fountain use.

Our practical experience with soda fountains demonstrates to us the necessity of the use of a preservative in crushed fruits and syrups in order to absolutely avoid the dispensing of fermented (therefore harmful and dangerous) fruits and syrups.

We believe the use of one-tenth of 1 per cent of benzoate of soda, as was permitted by your Board during the year 1908, to be wise and beneficial. We consider the prohibition of benzoate of soda in the above mentioned per cent to be ill-advised, unwise and detrimental. We respectfully direct your attention to the fact that Dr. E. E. Smith, professor of physiology and organic chemistry of Fordham University, New York, has overthrown and shown the error of Dr. Wiley's experiments with benzoate of soda. And we also respectfully call your attention to the preliminary report submitted to the Secretary of Agriculture by the referee board chosen by President Roosevelt, which shows that benzoate of soda is not injurious to health. The most authoritative physiologists are almost a unit in stating that benzoate of soda is not a poison and not injurious, but, like salt, has its good uses. The United States chemist, who is not a physiologist, opposes these views.

Benzoate of soda is not a poison in any sense. It is a valuable medicine and is given in doses of ten grains three times a day for an extended period with only beneficial effects. It is found to be present naturally in appreciable quantities in currants, cranberries and some other fruits. These fruits do not interfere with the digestive functions nor are they gastro-intestinal irritants. Benzoate of soda does not change the taste or appearance of fruit and does not mask or shield the quality of the fresh fruit, as do spices and smoke which are permitted as preservatives.

The use of one-tenth of 1 per cent of benzoate of soda by customary dilution, would be present in a glass of soda water in the proportion of 1/150 to 1/200 per cent. If you would drink three glasses a day for one year you would have taken about seven grains, or about half of an average medicinal dose.

The principal objection to its use, publicly stated by Mr. Barnard, is not because it is injurious to health, but because its use in food products might encourage the use, by unscrupulous manufacturers, of unfit raw material, i. e., under ripe or over ripe fruit. In that case the fruit would show for itself in quality since benzoate of soda cannot and does not mask or

cover up bad fruit, but it simply preserves it as it is—good or bad. Mr. Barnard's argument is certainly invalid.

The above objection might easily apply to spices (permitted by your Board) in the manufacture of catsup in case the manufacturer used unfit tomatoes, peelings, etc., because spices will mark or alter the taste of the product. Spices and smoke do mask spoiled meats, yet they are permitted.

In fruits or fruit syrups the short sighted manufacturers would have their troubles if they used bad fruits as some manufacturers have had. Why? Because the retailer would withdraw his trade from that manufacturer. The fear of losing his customer's patronage over the soda water counter compels the retailer to use the best fruits he can procure. If the harmless benzoate is prohibited in these products, the ordinary soda fountains, scattered as they are over residence districts as well as business sections of our cities and towns, will be unable to serve at all times crushed fruits free from fermentation. Such fermented fruits will be harmful. When preparing for the day's business the dispenser cannot foretell how much he will use; he cannot foretell the weather, which has everything to do with the sale of soft drinks. The morning may be warm or hot, a rain come up and a fall in the temperature will cripple sales. Thus, the prepared fruits, taken from the sterile package, would likely undergo a change and would have to be thrown away or might be used in a more or less fermented condition which would be dangerous, especially to young people and children, who are the greatest soda patrons.

Another important consideration is this: When should the fruit be thrown away? Can the conscientious dispenser always tell when the fermentation has commenced and consequently never serve any fruits but the unchanged fruit? We think not.

We believe the danger to health is much greater in attempting to serve crushed fruits and syrups without any preservative such as benzoate of soda, than to serve them prepared in the fresh state with a very small portion of a harmless preservative. We are familiar with practical soda dispensing, as you individually probably are not, and we respectfully request a most careful and searching investigation of this matter from the standpoint of the soda dispenser and the soda drinker, as well as the mere letter of the law, which law in spirit and intention, is designed to bear the greatest good, ere you entirely prohibit the use of benzoate of soda in crushed fruits for fountain use.

Respectfully submitted,

E. W. STUCKY,
President Indiana Pharmaceutical Association.

C. L. HACKET,
O. C. BASTIAN,
F. D. WARNER,
Executive Committee.

After consideration the above petition was laid on the table for the present.

The following resolutions sent to the State Board of Health were read :

Whereas, It is painfully evident to everyone that there exists much unnecessary suffering, a great amount of avoidable sickness, and not a few untimely deaths; and

Whereas, Sanitary statutes, pure food laws, Board of Health rules, laboratory examinations and analysis, and the elevation of the standards of medicine have all contributed to the improvement of the public health, and have resulted in the saving of hundreds of thousands of dollars to the people of Indiana, therefore be it

Resolved, That the Tippecanoe County Medical Society, in regular session assembled, hereby place the stamp of approval upon the labors of the State Board of Health of Indiana, and commend the proficient, advanced, aggressive and untiring efforts of its very able Secretary in preventive medicine, and plead with our representatives in the law-making body now in session to sanction no bills looking to a backward step, and implore their aid and support of all reasonable bills to advance the higher standard of medicine and hygiene.

W. S. CAMPBELL,
M. M. LAIRY,
G. P. LEVERING,
Committee.

Passed at regular meeting January 11, 1909 and ordered to be sent to the State Board of Health and to each secretary in this the 9th District and also a copy placed upon the desk of each Senator and each Representative of the present legislature.

WM. M. RESER, Secretary.

Concerning the above the following was adopted :

Resolved, The Indiana State Board of Health greatly appreciates the kind resolutions of the Tippecanoe County Medical Society, and herewith presents its cordial thanks. A copy of this resolution to be sent to the Tippecanoe County Medical Society.

The following report was received and ordered placed on record :

Report of the investigation of the typhoid fever epidemic at Taylor University, Upland, Grant County, Indiana, January 26, 1909, by John Owens :

Site.—The University Buildings are located in a suburb about a mile south of Upland and on fairly high and well-drained lands. Some trees are scattered about; the soil is clay.

Buildings.—Main University building is brick, two stories high, closets in basement and poor ventilation throughout. There are five dormitories within a radius of one hundred feet, all of frame, except one of brick. There are outside closets to all of these buildings and these had not been cleaned for at least a year prior to the outbreak. Very filthy conditions

were also found in the alley and in the back yard of the dining dormitory. One of the small dairies is down the alley seventy-five feet from this dormitory, and practically every feature of the milk law is being violated here.

The origin of the first case seems to be uncertain. It originated in a family just across the alley from the dining dormitory. A young man living here was employed in cleaning up around the buildings before school opened in the fall and was stricken. Conflicting reports are to the effect that he had not been out of town during the summer and also that he had just returned from a visit out of town. In any event, he had been sick for several days before taking his bed, his temperature being 104 degrees when a physician was called. The closet used by the family is just across the alley and not more than 40 feet from this dining dormitory referred to. After the young man took his bed, the slops, treated with chloride of lime, were buried near this same closet. Within a short time, a young lady *living in another part of town but eating at this dormitory* was stricken. The closet used by this person while at school is located twenty feet from the dormitory referred to and the slops and backyard conditions are very bad even at this time. During the hot weather of the early fall, they must have been much worse.

Soon after these cases, the epidemic became general. It continued about three months or until the middle of December. There were upwards of thirty cases and three died. The school was forced to suspend for several days. One of the dorms was made into a temporary hospital and nurses employed to take care of the sick. None of the outside citizens were stricken, and with one exception—that of a child—took their meals in the dining dormitory.

The latter fact is reported as significant as indicating that the source of infection was probably at or near this dormitory. Several theories have been advanced to account for this epidemic:

First, that it came from the water used. This seems hardly probable, however, for all the people of the little town get their water from the University well and only the dining dormitory students were affected. However, an analysis of the water was made, but failed to reveal any typhoid bacilli, or other dangerous properties present. In fact, it showed the water to be entirely potable and so this theory is ruled out as improbable.

Second, the University authorities were inclined to think that the disease might have been brought to them in canned vegetables, particularly canned peas, which some of the students said made them sick. In this connection it was recalled that this product is processed at considerably above the boiling point of water, to the point of perfect sterilization, and this high temperature would destroy the germs of typhoid fever had they been present when the peas were canned. Exit theory No. 2.

Third, an infected milk supply. Samples were sent to the bacteriological laboratory for analyses, but no report has been received. It is known, however, that if such infection were present in the milk, it must have been added *subsequently* to the time of milking. The proposition resolves itself then, into the question as to whether or not there were conditions that would make such infection probable. The answer to this has

already been anticipated. Being the first case (the origin of which is in dispute on account of conflicting stories) every person stricken, before taking his bed, used the open closets in the rear of the dorm, used as a dining room. This closet is not more than 75 or 100 feet from the dairy barn, and extremely unsanitary conditions doubtless prevailed, at both places. During the hot season, the place was infested with flies which found there in the slop barrels and piles of manure, ideal eating and breeding places. Later in the season, when the cooler weather came and these disease infested flies were driven indoors and the plague continued. When the flies disappeared, the disease stopped.

It is the belief therefore, of the investigator, that the whole trouble at Upland, was due to the fact that extremely unsanitary conditions prevailed about the kitchens and closets of the dormitories, maintained by the University for its students, and that the infection was spread to the milk and other food by the flies (barring the first case, which may have come from out of town or have been obtained while cleaning up about the dormitories, the investigator being unable to resolve the conflicting stories on this point).

It is suggested that the President, Dr. Monroe Veyhinger be notified—

1. To have the whole premises thoroughly cleaned and disinfected—this to include a complete sterilization of the closets, especially; and,
2. To have the piles of manure and other refuse, removed from the alleys and to take every precaution by requiring absolute cleanliness in kitchens and closets, to keep down the flies and prevent the infection from developing again.

Report of Mr. Barnard of the fourth meeting of the Lake Michigan Water Commission:

Indiana State Board of Health:

Gentlemen—On the 23rd day of January, 1909, the fourth meeting of the Lake Michigan Water Commission was held at Indiana Harbor, Indiana, at which meeting the State Board of Health was represented by Prof. R. L. Sackett and myself. I append a copy of the minutes of the meeting that you may understand the nature of the meeting and the subjects discussed, which were of special interest to the northern cities of the State:

MINUTES OF THE FOURTH MEETING OF THE LAKE MICHIGAN WATER COMMISSION, INDIANA HARBOR, IND., January 23, 1909.

Members of the Commission present: Evans, Gehrmann, Hill, Southerland, Young, Sackett, Barnard, Lauer, Bartow.

There were also present: C. L. Kirk, Manager E. Chicago & Indiana Harbor Water Co.; Dr. Wm. D. Wels, Secretary Board of Health, Hammond, Ind.; Frank B. Lewis, Jr., Member Board of Health, Whiting, Ind.; Dr. Arthur Lederer, Chemist and Bacteriologist of Sanitary District of Chicago; J. H. Kasper, chief engineer, Hammond Water Works, Hammond; A. Robertson, mayor Highland Park, Ill.; Dr. J. F. Blehn, Department of Health, Chicago, Ill.; Mr. J. H. Brewster, State Board of Health, Indianapolis; Mayor Edward DeBrie, East Chicago, Ind.

The minutes of the preceding meeting were read and approved.

The report of the Committee on Papers and Publications was received and the committee continued.

An informal report was given by the Committee on the Control of Shipping. A formal report is to be given later. The Committee reported that there were no laws to control shipping, as to the disposal of wastes from vessels. It was suggested that typhoid fever might be added to the diseases controlled by quarantine, but for lack of means that has not been done. The establishment of a quarantine anchorage would be helpful. Legislation is pending at Washington to provide for interstate control.

The Committee on Standards appointed at the Milwaukee meeting had no report ready.

Mr. H. E. Barnard read a paper on the investigations of the southern end of Lake Michigan bordering on Lake County, Indiana. The investigations described were made by H. E. Barnard and J. H. Brewster of the Indiana State Board of Health.

Dr. Evans added a statement concerning Gary, and the Calumet River, showing how the sewage disposal proposition is of common interest to residents of the two States, and that joint action must be taken to protect Lake Michigan from pollution. The waste from the glucose sewer was discussed. Dr. Biehn spoke of the presence of the colon bacillus in this waste. Mr. Barnard stated that the debris from the glucose sewer at the Hammond intake contains 30 per cent of protein. Mr. Brewster stated that the waste from the glucose sewer caused the formation of slime on ropes and other material immersed in the water in the vicinity. Dr. Lederer stated that the records showed that in Germany the waste from one sugar factory was equivalent to the sewage from a town of 50,000 people. Bartow stated that the waste from the glucose refinery at Waukegan was equivalent to the sewage from a city of 200,000, and that the waste though practically sterile as it came from the plant, formed an excellent medium for the growth of bacteria, should it become infected. Mr. Kasper, chief engineer of the Hammond Water Company stated that the bottom of the Lake was clean before the glucose factory was put into operation, but that now it was dirty and that the piling was foul. Dr. Barnard stated that the situation of the Lake water at Gary should be investigated and that the work done in Michigan City should be carried further under different conditions.

It was voted that the Chairman appoint a committee to formulate two or three propositions for the relief of conditions at the southern end of Lake Michigan for the consideration of the water committee of the Association of Commerce of Chicago. Sackett, chairman; Lauer and Weis were appointed.

It was voted that the Legislature of each State be asked to appropriate \$2,500 for the investigation of Lake Michigan. This to include \$200 per delegate for expenses of the delegate to meetings, and for the expense of the secretary's office, and for publications. The balance is to be used for special investigations to be carried on by the Boards of Health or other Bureaus in each State.

Barnard reported that the investigation of the southern end of Lake Michigan bordering on Lake County had cost \$1,500 and that \$750 had

been paid by the municipalities along the Lake and the balance by the State Board of Health.

The meeting was addressed by Mayor Edward DeBrie of East Chicago. Adjourned to meet at Chicago on call of the chairman.

It is to be hoped that some special provision may be made at this session of the Legislature for the support of the Commission, so that it may not be necessary for the State Board of Health to pay the expenses of its representatives on the Commission from its present funds.

On the 21st day of January I received a telegram from A. C. Bird, Chairman of the Executive Committee of the Association of State and Federal Food Commissioners, asking that I come to Washington to meet with the Commissioners from the various states for the purpose of staying, if possible, the assault upon the Federal Pure Food Law, which in a large measure has already impaired its usefulness. To this telegram I replied that it would be impossible for me to come. On the 24th of January, upon my return from Indiana Harbor, I received a second telegram to this effect: "Come to Washington at any sacrifice," signed by Commissioner Emery, the president of the association, Commissioner Bird, Commissioner Allen and Commissioner Scoville. I received this telegram two hours before the last train which would take me into Washington in time for the meeting, and, after endeavoring to reach you by phone, I called up Dr. Tucker and stated the case to him. He gave orders to me to proceed at once to Washington, which I did, arriving there at 7:30 that evening and immediately thereafter accompanied the commissioners present to the White House, where we discussed the Pure Food situation for more than an hour with President Roosevelt. It appears that the meeting in Washington was called by the Chairman of the Executive Committee of the association in response to a request from President Roosevelt that we meet with him on the evening of Monday, January 25th. The commissioners also called upon Congressman Hepburn, the author of the Pure Food Bill in the House, and Senator McCumber, the author of the bill in the Senate, for the purpose of urging them to do whatever was possible to prevent the further emasculation of the Pure Food law. I may say that this meeting was called before the report of the referee board was rendered and had nothing to do with the so called "benzoate of soda controversy." I believe that our meeting with the President resulted in much good to pure food work, the effects of which will be felt in Indiana to a marked degree because of the intimate relationship of the State and Federal Pure Food Laws.

On the 9th of February a meeting of the Lake Michigan Sanitary Association was held at Chicago. I attended the meeting to discuss the work of the State Board of Health at the Lake last summer.

Among the men present were: Dr. Geo. W. Webster, President Illinois State Board of Health; Dr. Southerland, Member State Board of Health of Wisconsin; Dr. Perry Schultz, Secretary Board of Health, Grand Rapids, Mich.; Dr. T. B. Templin, Health Officer, Gary, Indiana; Dr. Wm. Wells, Health Officer, Hammond, Indiana; Lawrence Becker, Mayor, Hammond, Indiana; Dr. H. Judson, Mayor, Lake Forest, Illinois;

W. H. Clendenen, Mayor, Zion City, Illinois; R. R. McCormick, President Chicago Drainage Commission; W. A. Humphrey, President Chicago Association of Commerce, and other men interested in the pollution problems of Lake Michigan.

It is apparent that the work of the Board as done last summer by Mr. Brewster of the State laboratory of hygiene, has aroused much interest in cities located on the Lake in the four states, and the work accomplished at Michigan City and Indiana Harbor has received the highest praise from health officials and sanitary engineers, and has, I believe, done much for the welfare of Indiana cities, that cannot well be estimated at this time. It is apparent the public interest in the pollution of the Lake water and in the disposal of sewage is so great that present conditions will not long be endured. If it were possible for the State Board of Health to secure legislation which would authorize the formation of a sanitary district, it would seem that some action should be taken in that direction, for, although the matter is a local matter which ought to be settled by the cities directly concerned, yet, as is so frequently the case, the conditions existing in the cities of Hammond, East Chicago and Whiting which make each municipality a political unit, seem to block any positive action by those cities at the present time. The fear which has obtained that the interest of the Illinois cities in the pollution problem of Lake Michigan was selfish, does not longer exist. It is apparent as result of our work that the cities of Indiana are affected as much by the sewage of Illinois cities as those cities are affected by our domestic and manufacturing offal. The problem is now an engineering one to be solved by the joint action of the cities of the two states, and whatever measures are taken for the relief of Illinois cities will be of equal benefit to Lake County.

REPORT OF PROFESSOR SACKETT.

LAFAYETTE, IND., February 4, 1909.

Indiana State Board of Health:

Gentlemen—On January 23rd I attended the meeting of the Lake Michigan Water Commission. I was made chairman of a committee to discuss the various ways in which the sanitary problem of pure water and sewage disposal for the Indiana and Illinois cities near Chicago might be solved.

On January 28th I met on my own responsibility and at my expense with the Commission appointed by Mayor Busse to study the conditions on the Illinois side of the line. They have already begun to plan a system of sewers, are asking the U. S. Government for the privilege of enlarging the Chicago Drainage Canal to carry the additional sewage and are about to investigate sewage disposal also.

Shall the two states proceed independently, each in its own way and in its own good time, or shall the two states join forces in a single sanitary district, created by similar statutes in the two states with a joint board of control and taxation. I enclose a letter to the Attorney General asking whether the latter is legally possible under the state constitution. Will you press the point on his attention for an early reply?

We desire to formulate some memorial to present to each legislature before the close of their present sessions. The difficulties in obtaining an agreement of the two states on any measure and the added difficulty of obtaining new legislation as the work would proceed makes it probable that each will have to solve its problem independently. That means that a sanitary district extending from east of Michigan City to the Illinois-Indiana line and including several hundred square miles will need to be formed. The boundary can only be determined by a careful investigation of the entire area.

Several years must elapse before engineering work for the relief of this district can be begun. There must be a statute creating such a district and machinery for the formation of a Commission to study the engineering problem for the whole district and for the future as well as the present. The problems of land drainage and the reclamation of swamp lands, of dredging and navigable waterways must be solved by the same commission as they arise.

There is the question of taxation to meet the preliminary work and the construction.

In view of the money now being spent in temporizing and in construction that must ultimately be abandoned as contrary to the interests of the district, the first steps ought to be taken as soon as possible leading toward a comprehensive plan for the protection of this community which will have a population of a million at no distant time.

I have conferred with the Chief Engineers of the Sanitary District and they feel that they have already begun to meet the needs on their side of the line and as soon as this is accomplished they will exert pressure on the Indiana corporation adjoining. The Calumet River flows from Indiana into Illinois. Its pollution by Indiana cities after Illinois has removed the causes now existing on its side would lead to serious legal complications.

I need not go into the engineering problems involved so far as they are now evident except to say that no route for a drainage canal in Indiana has yet been discovered. To drain this district into the Chicago Drainage Canal will probably be opposed by Chicago. The latter city sees the necessity of reserving the entire capacity of the canal for its own use.

The above report is submitted that your Board may take such steps toward undertaking the preliminary investigation itself or toward legislation in the matter which will bring relief to a district that already needs it. No unity of action can be expected by all cities vitally interested and delay in taking hold with an iron grip will lead to each protecting itself at the expense of the other, which can have but one result—serious loss of life and of property values.

Very truly,

R. L. SACKETT.

Adjourned.

After some discussion the report as read was ordered spread of record in the minutes.

CONDEMNATIONS OF SCHOOL HOUSES.

Petitions being received, signed by at least ten patrons of each of the following named schools, asking the State Board of Health to make sanitary survey and take such action as might seem right, the surveys were accordingly made.

PETITION.

VELPEN, Ind., July 25, 1907.

We, the undersigned patrons of Velpen school, beg to call your attention to the condition of the school building at this place. Said building is a wooden structure, 25 years old, dilapidated, with portions of the floor on the ground, heated by stoves, with bad flues, pretty much all the light the house has comes in the face of the pupils, and not sufficient in quantity at that. Extremely badly ventilated, and otherwise unsanitary, thereby exposing the pupils to the ills of such conditions. And last though not least, the house is entirely too small, not having sufficient floor capacity, there being 200 pupils of school age in this district, and only three rooms in the house, making $66\frac{2}{3}$ pupils to each room. During the last term the school was frequently dismissed on account of smoke and cold. The advisory board seems to be unwilling to make the necessary appropriation for the erection of a suitable building to accomodate the pupils of this school district.

We, the undersigned patrons of said district, therefore, pray you to proceed to have said house condemned at your earliest convenience so that the trustee may have time to erect a house before the next school term.

Signed:

L. R. Broadwell, M. D.
J. F. Geddes,
Jones Kemp,
Geo. H. Hollenberg,
B. M. Cline,
J. Hollenberg,

Frauk Day,
J. W. Chambers,
Fred Niesmann,
Marion Robinson,
Henry Robinson,
And others.

Report of inspection of Velpen School, Velpen, Pike County, January 4, 1909:

Site.—High, rolling clay soil, one acre.

Building.—Frame, old; old shingle roof, leaks in places. Fronts west; two stories; back one story high, 2 feet from ground; no foundation.

Vestibule.—Downstairs: This vestibule ceiled with lumber; light coat of old paint. Stairways are three feet wide. The landings are 3x5. Risers on stairs are 5 inches over the step, which is very narrow, about 4 to 5 inches.

Upper Vestibule.—Is like lower; same size, guarded by railings that are very frail. Size 20x12 feet. Two windows on west, each 11 square feet.

Primary Grades downstairs: Twenty-four pupils, face east. Size 12x18. Each pupil has 8 square feet floor space. Light area three-tenths

floor area. Each pupil has 3 square feet light. Walls and ceiling ceiled with lumber. Ceiling 10 feet high; light coat of paint. Flue very bad; room smoky. No fire could be kept in it on day of inspection. Blackboard on east side, between windows. Light from east and west sides. Seats single and double, badly scarred. Floors shaky. Everything dilapidated.

Grammar Grade: Room an exact duplicate of above and directly over it, except that the size is 18x16 feet. Each pupil has 12 square feet floor space. Light area one-fourth of floor area.

Intermediate Room: Seats single and double, much scarred. Floors shaky. Walls wood, slightly painted. Ten-foot ceiling. Thirty pupils, each 19 feet floor space. Light area one-eighth floor space.

High-school Room: Is over a grocery store. No closet facilities provided. Seats single, Q. K. No front stairway. Blackboard painted on plaster. Paper in fair condition. Number of pupils, 24; face north. Light from west, south and east. Blackboard on north. Each pupil has 34 square feet floor space. Light area, one-ninth floor area.

Out-buildings at main building are in very poor condition. Open well; water drawn up with bucket and rope. Water buckets and tincups are used throughout all rooms.

General conditions are very unsanitary, and the fact that part of the work is held in an unsuitable room down town makes the construction of a new building more necessary.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Velpen, Pike County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, It is

Ordered, That said schoolhouse at Velpen, Pike County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1st, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

To the State Board of Health, Indianapolis, Ind.:

We, the undersigned patrons and taxpayers of School District No. 2, Madison Township, County of Dubois, and State of Indiana, do hereby ask for a sanitary survey of the grounds and building used as a public school building, located in above said district, township, county and state.

We believe said building to be dangerous to the health of the pupils on account of its improper facilities for heating and ventilating. We also believe it to be so constructed and arranged as to be dangerous to the life of the pupils in case of fire, and that its arrangement and size render it in-

adequate to accomodate the number of pupils, having a legal right to attend school in said district.

We therefore, ask your honorable board to suggest such improvements and alterations as you see fit, or if this building cannot be so improved and remodeled as to meet the requirements, order same removed and a modern structure erected in its stead.

The following are the officers, viz: Samuel A. Glezen, Ireland, Ind. Trustee. Frank Merker, R. R. No. 1, Jasper, Ind.; Sebastian Stilwell, R. R. No. 25, Velpen, Ind.; John Robinson, R. R. No. 2, Velpen, Ind., Township Advisory Board.

I. B. Myers,
Jos. Wigand,
Silas Dorsey,
James L. Norman,
A. M. Anderson,
T. H. Glezen,
W. C. Murry,
J. O. Norman,
Frank Hopkins,
Isaac A. Norman,

L. B. Johnson,
M. L. Steinhart,
W. E. Cooper,
Cullen B. Greer,
Albert Morgan,
George Kellam,
Jacob Frick, Jr.,
Fred A. Stewart,
Elijah Stewart,
W. H. Kellems.

Report of inspection of the Ireland School, District No. 2, Madison Township, Dubois County, Indiana, January 5, 1909, by John Owens:

Site.—Fairly high, rolling, clay soil. About 1 1/2 acre; few trees.

Buildings.—Frame, four rooms; part old, rest built twelve years ago. Shingle roof. Doors are large, 5x8, swing inward. Vestibule 10x10 feet. Stairway wide, 5 1/2 feet, one landing, 5 1/2x5 1/2 feet. Good ceiling. Walls and ceiling plastered, tinted blue, fair condition.

Vestibule and cloakrooms are sufficiently large and in good condition, except for some bad places in floors. Ceiling 10 feet high.

Primary room, downstairs, east wing of building: Twenty-two seats, facing north; single, double, all sizes; some bad. Walls and ceiling wood, blue tint. Pupils face north; board on north and east. Light on east and south. Ceiling 10 feet high. Each pupil has 44 square feet floor space. Light area one-eleventh of floor area. Ventilation in this room is bad. Boards slate.

High-school room, immediately above, is identical in size, 35x25 feet, twenty-six seats. Each pupil has 33 square feet floor space. Light area one-eleventh of floor area. This room is also poorly ventilated and lighted.

North-west room downstairs, intermediate grades. Thirty seats, part double, badly scarred. Floors O. K. Walls and ceiling plastered and tinted blue. Two stoves; smoky flues. Pupils face north; light from east and west. Pillars through center, two rows, large room. Pupils face north; blackboard on north. Each pupil has 40 square feet floor space. Light area one-twelfth of floor area.

High-school room, second division, immediately above, is same size 30x40 feet. Light area one-twelfth of floor area. Each pupil has 40 square feet floor space. Large room; 30 pupils. Two smoky stoves in same post-

tion. This room also contains the chemical laboratory, not partitioned off.

This school building should be put in better condition, flues fixed, chemical laboratory partitioned off, etc. The light can hardly be made better, but the ventilation could be improved by opening transoms into cloak rooms and vestibule.

I believe the building should be condemned, and when put in proper condition its use allowed for another year—not more than two at most. A new building should then be put up in place of it. The trustee says if he has to do it, he will, but would prefer a year or so in which to get ready. Trustee's name is J. H. Atkinson, Duff, Ind., and he wishes to be informed direct as to the action of the Board.

There is a difference of opinion as to the advisability of a new building at present. Supt. Cooley, of Evansville, inspected school this year and commission was granted. Everybody would agree on the improvements. One faction would be opposed to a condemnation and the other would be glad of any prospect for a new building. Present county superintendent and trustee are in no hurry to build.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse, District No. 2, Madison Township, Dubois County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse District No. 2, Madison Township, Dubois County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

AYRESHIRE, Ind., September 16, 1908.

State Board of Health, Indianapolis, Ind.:

This is to certify that we, the undersigned patrons of schools at Ayreshire, Pike County, Ind., do hereby request that the State Board of Health investigate the sanitary conditions of our schoolhouse.

Signed as follows:

A. J. Hedges,
H. S. Hughes,
U. G. Willey,
George Pickle,
Alfred Adams,
George Vanlaningham,
James A. Spyers,
F. B. Browder,
Gus Harler,

A. Sermerskelm.
Samuel Tisdol,
F. O. Woodrey,
Edward E. Woolsey.
Geo. Benedict,
I. H. Eanes,
A. Lanzo Dean,
John Barlow,
Isaac Coffa.

Report of inspection of Ayrshire Schools, Pike County, January 5, 1909, by John Owens:

Buildings.—Three one room, frame; two shingle roof, one iron. the latter the colored school. Two of the buildings, the white schools, occupy the same lot, one-half acre, high, dry, clay soil. Building in which upper grades are held, should be condemned outright. The other white school building could be repainted and enlarged to accomodate the upper grades, and the colored school should be repainted. The whole town is dirty and derelict. Mining is the industry.

White Schools.—Grades 1, 2 and 3: Seats single and double, all sizes: badly scarred. Ceiling and walls wood, unpainted. Pupils face south: blackboard on south. Nine-foot ceiling. Vestibule 10x8 feet. Forty-five pupils in room. Each pupil has 13 feet of floor space. Light space one-ninth of floor space. Open well, typhoid fever in schools a year ago. Blackboards on north and south sides.

Grades 4, 5, 6, 7, and 8: Pupils 30; face north. Seats double, bad. Celled with wood, not painted. Floor bad. Flue smoky. Buildings one to two feet from ground; no foundation. Outhouses bad. All doors 3x7 feet. Each pupil has 20 square feet of floor space. Light area one-ninth of floor area. General conditions bad.

Colored Schools, Ayrshire—Pupils 15, face west. Board on west. Tin roof. No foundation; props; two feet from ground. No well. Closets bad. Ceiling and walls plain boards, unpainted. Each pupil has 24 square feet floor space. Light area one-fifth floor area. Seats all sizes, single and double, badly scarred.

These buildings are in keeping with the town.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Ayrshire, Pike County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Ayrshire, Pike County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

November 16, 1908.

We, the undersigned, respectfully petition the State Board of Health to make a sanitary survey of the schoolhouse at Huron, known as District

No. 11, Spice Valley Township, Lawrence County, and to take such action as may seem proper.

Trustee's name and address, Thomas J. Daniels, Huron, Ind.

Pricy Terry, General Merchandise,
James F. Wigley, Teacher,
W. A. Thompson, Mail carrier,
J. E. Terrell, General Merchandise,
Wm. H. Edwards, Farmer,
James A. Russell, Farmer,
Howard Ferrell, Groceries,
A. L. Elmore, Undertaker,
Ralph Gerkin, Farmer,
Chas. Snow, Section foreman,
Raleigh Mefford, Barber,
Z. R. Terrell, Dealer in fish and game.
Kate Padgett, Dressmaker.

Report of inspection of District No. 11, Spice Valley Township, Lawrence County, Indiana, P. O. Huron, Indiana, January 6, 1909, by John Owens:

Site.—Fairly high and well drained, clay soil, one-third acre, located in town of Huron.

Outbuildings.—In bad condition. Closets, open vault, need cleaning, and the buildings are bad. Near together and no shields. No well on lot; pupils get water from neighboring houses.

Building.—Two-story frame, two rooms, shingle roof; 20x36 feet; faces north. Two doors on north, 2 1/2x7 feet with transoms. Two feet from ground. Smoke-discolored flues. Ceiling board, varnished O. K. Wall plaster, falling off. Blackboards, east, south and west. Seats single and double, not fastened to the floor, shaky, bad. Floor fair. Number of pupils 51. Nine-foot ceiling. Each pupil has 15 square feet floor space. Window space one-eighth of floor area. Blackboards on south, east and west. Light from east and west. Pupils face south.

Plan of upper room: Ceiling and wall plaster, falling off. Floors fair. Seats single and double, badly scarred. Blackboard, printed felt, south, east and west. Pupils face south; light from east and west. Seats all sizes. Twenty-five pupils. Light area one-eighth of floor space.

A lower vestibule between north end of room and doors serves as a cloak and junk room, and as a stair entry. Stairway four feet wide. Vestibule 8x23 feet. Upper vestibule is an exact duplicate of lower and serves for stair landing and junk room.

This place needs a new school building, and the ex-trustee tells me the people want it, "condemnation or no condemnation."

New Trustee, O. C. Bryant, Williams, Ind.

Ex-Trustee, Thos. J. Daniels, Huron, Ind.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse, District No. 11, Spice Valley Township, Lawrence County, Ind., is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse, District No. 11, Spice Valley Township, Lawrence County, Indiana, is condemned for school purposes, and shall not be used for said purposes after June 1, 1909, and, if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

September 22, 1908.

To the State Board of Health, Indianapolis, Ind.:

Gentlemen—We, the undersigned, respectfully petition your honorable board to make sanitary inspection of the schoolhouse at Oard Springs, known as District No. 1, Jennings Township, Scott County. The name and address of the trustee is O. K. Williams, Austin, Ind.

Wm. Thornell,
Chester B. Kinney,
Elwood Skeel,
Ed Everhart,
E. W. Everhart,
G. T. Johnson,

J. P. Wise,
Walter Patton,
J. N. Keith,
Frank W. Clemons,
Jesse Ritchison.

Report on Oard Springs, Jennings Township, District No. 1, Scott County, Indiana, January 6, 1909, by John Owens:

Site.—High, well-drained, one acre, no trees, yellow clay.

Building.—One-story frame, new shingle roof; 26x36 feet. Single and double seats. Badly plastered walls and ceilings. Stove heat. No well. Outbuildings poor; no screens. No foundation; 6 inches to 1 1/2 feet on pillars.

Enrollment 50. Both seats, old and new. Windows, 10 square feet. Walls, plastered, old. Ceiling, of board. Blackboard slate, north. Pupils face north. Light from east and west, floors fair. Ten-foot ceiling. Each pupil has 18 square feet floor space. Light area one-eleventh of floor area.

This building is perhaps, no better than many others, which fact is no reason for its present condition. Its defects are very marked.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Oard Springs, Jennings Township, Dis-

trict No. 1, Scott County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse, at Oard Springs, Jennings Township, District No. 1, Scott County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

PARIS CROSSING, IND., Oct. 19, 1908.

We, the undersigned, respectfully petition the State Board of Health to make a sanitary survey of the schoolhouse at Paris Crossing, known as District No. 1, Montgomery Township, Jennings County, and to take such action as may seem proper.

Trustee's name and address, Oliver Shepherd, Commiskey, Ind.

New Trustee, Wm. B. Runyan, Commiskey, Ind.

S. L. Wright, farmer and banker,

S. G. Booard, cashier of bank,

O. Gaddy, physician,

W. G. Humphrey, Jr., merchant,

E. S. Wilson, agent B. & O. R. R.,

B. H. Dixon, merchant,

J. E. Hudson, merchant,

John Ray, blacksmith,

W. A. Landon, miller,

S. J. Dodd, engineer,

S. M. Fish, druggist.

Report of inspection of school building at Paris Crossing, District No. 1, Montgomery Township, Jennings County, Indiana, January 7, 1909, by John Owens:

Site.—High, dry, $1\frac{1}{2}$ acres, east side of town, deep well. The old building shown above was the original schoolhouse of the town. When the new building was constructed 13 years ago it was moved off the lot and used for other purposes. Then it was moved back and made into a sort of theater. When the new building became overcrowded it was put into commission again and has been used two or three years despite a former condemnation by a county superintendent.

Plan of Old Building.—Size 32x20: area of windows 16 square feet. Old, ramshackle frame building on corner props; loose, bad door and windows. The blackboard is constructed of loose plank put across front of "stage," and is in bad shape. The loose, open construction of the building

[5—22707]

makes it extremely hard to heat, and school is dismissed often on account of the cold. The room is worse than a barn and should be condemned. School should not be allowed until it is repaired and made warm, and then only for present year. Closets, four; plastering is off in many places. Each pupil has 25 square feet of space; light area one-sixth of floor area. A great deal of junk and refuse about buildings.

New Building.—Is of brick with stone foundation; shingle roof; large nine-foot hallway through center; two rooms, north and south. It was constructed 13 years ago with the idea of adding to it later along. Two rooms could be added in the rear; or, better, the roof raised and two placed above. The roof is bad and the walls and ceilings need painting.

Primary room: North; stove heat; good ventilator, 24x36 inches, on same side as flue and alongside. Floors O. K. Walls and ceilings need painting. Roof bad. Seats single, fair. Should have furnace heat. Was once in use and later discarded; a mistake. Boards slate. Pupils face east. Each pupil has 16 square feet floor space. Light area one-seventh of floor area.

High School Room: Twenty by thirty-two feet. Floors O. K. Board east, south and north; fair. Seats single, fair. Walls and ceilings plaster; need painting. Roof leaks. Stove heat. Good system of ventilation. Should have furnace heat. Once used but discarded. Each pupil has 26 square feet floor. Light area one-seventh of floor area. Pupils face east; light from south and west.

This building could be put in good condition at small expense, and the large hallway, 9x32 feet, through center makes possible the construction of more rooms.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Paris Crossing, District No. 1, Montgomery Township, Jennings County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse at Paris Crossing, District No. 1, Montgomery Township, Jennings County, Indiana, is condemned for school purposes after June 1, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

POWERS, IND., August 17, 1908.

We, the undersigned, respectfully petition the State Board of Health to make a sanitary survey of the schoolhouse at Powers, known as District No. 10, Jefferson Township, Jay County, and to take such action as may seem proper.

Old trustee's name and address, John L. Resur, Redkey, R. R. No. 3.

New trustee's name and address, Jacob Dull, Redkey, Ind., R. R. No. 2.

Oscar Irvine, Farmer.

Charley A. Dull, Farmer.

John A. Fleshen, Farmer.

Chas. B. May, Farmer.

John R. Wood, Farmer.

Marion Brenner, Laborer.

Wm. J. Heston, Farmer.

A. W. Flesher, Farmer.

Margret Scarbrough.

Osben Silvers, Laborer.

Flem Brenner, Laborer.

C. H. Dupe, Farmer.

Report of inspection of District No. 10, Jefferson Township, Jay County, Indiana, January 14, 1909, by John Owens:

Site.—Fairly high and dry, one-half acre; no trees.

Outbuildings.—Fairly good; brick; separate; no shields; reasonably clean.

Building.—Brick, two-story. Upper room not in use. East walls out of line 3 or 4 inches. Walls cracked in several places. Size 27x23 feet. Iron roof. Pupils face east. Blackboard on east, slate. Seats all sizes, much cut up, single, nonadjustable. Floor bad. Box stove. No ventilation. Ceiling 12 feet high. Walls, blue paper, old. Ceiling pink, coming off. Twenty-two pupils. Vestibule used for a woodshed; no other provided. Light area one-sixth of floor area. Each pupil has 28 square feet floor space and 338 cubic feet space.

The building is old, and the badly cracked and bulging walls indicate that it is unsafe. In my judgment it should be condemned, to take effect before next year, and the trustee notified to instruct the teacher to notice very carefully and take pupils out if any other suspicious conditions arise. The building is said to shake in a high wind. There is no room in the little town that could be used for school purposes.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse, District No. 10, Jefferson Township, Jay County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse, District No. 10, Jefferson Township, Jay County, Indiana, is condemned for school purposes after June 1, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

Report of inspection of District No. 11, Marion Township, Boone County, Indiana, January 27, 1909, by John Owens:

Trustee, C. C. Howard, Sheridan, R. F. D. No. 21.

Site.—This building is located $1\frac{1}{2}$ miles northwest of the town of Terhune, on the east side of the road, on a site that is about two acres in extent, and is quite high and well drained. There is a deep driven well and the general outside conditions are satisfactory.

Building.—The building is a frame, one story, shingle roof. Sits east and west and is on a foundation of brick $1\frac{1}{2}$ to 2 feet above the level of the ground. The foundation at the northwest corner of the building is giving way, and this causes the floor in the corresponding corner of the room above to be lower also. The building is 25x32 feet, outside measurement, and there are three windows on the north and on the south, and each window admits 12 square feet of light. The blackboard is on the east of the room and is of slate. The pupils face the east. The seats are double, old, not adjustable, all sizes, much cut up and unsatisfactory. Eye strain is noticeable in this building, particularly from the rear seats. Floors are in fairly good condition. Have been recently oiled. The walls and ceilings are newly papered and the woodwork painted. This district was one of those abandoned in the past upon petition of the patrons, and this building has likewise been condemned by the State Board of Health. It has been recently opened for school by a new trustee after having made certain improvements. It seems, however, that all of the conditions imposed by the State Board of Health were not met previous to the opening of school on or about January 19th.

Each pupil has 30 square feet of floor space, and the light area is one-ninth of the floor area. In the meeting of patrons referred to in the two previous reports the man who recently did the papering in this building declared that the plastering at the time the paper was put on was cracked in many places and in danger of falling off. This gentleman, whose name is Sam Wallace, says that the attempt was made to plaster over the worst parts of this ceiling, but in his opinion the plastering above the heads of the pupils is liable to fall off at any time. With this exception he regards the building as safe.

Recommendation.—With reference to No. 11, it is recommended that the plastering be taken from the ceiling, the flue examined carefully and made safe if not in that condition at the present time, and that new plastering and paper be placed thereon. That the northwest corner of the building be raised, and such other changes be made as are necessary to result in a level floor. That the old seats be discarded and new adjustable seats be installed in their places. It is recommended, however, that the present term of school be allowed to continue in this building, carefully watching every condition, and that these changes be required before another term of school begins.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse, District No. 11, Marion Township, Boone

County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse, District No. 11, Marion Township, Boone County, Indiana, is condemned for school purposes after June 1, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

Report of inspection of District No. 12, Marion Township, Boone County, Indiana, January 27, 1909, by John Owens:

Trustee, C. C. Howard, Sheridan, R. F. D. No. 21.

Site.—The site is located $1\frac{1}{4}$ miles northeast of the town of Terhune, and comprises about two acres, is fairly high and well drained, situated on the west side of the road; the building sits north and south.

Building.—The building is old, of soft brick, 30x40 feet, one story, shingle roof. This district was abandoned at one time upon petition of the patrons, was condemned by the State Board of Health, and has been reopened for school upon petition of the patrons, and previous to the opening certain improvements suggested by the Board were made. •

At the time of inspection conditions were found as follows: The walls and ceiling are newly papered, a pale blue prevailing. The woodwork is newly painted. The floors have recently been oiled, and boards placed in the lower part of the window space, deflecting upward the entering currents of air. The seats are old, double, much cut up, scarred, but clean. They are nonadjustable and of all sizes. The blackboard is painted on rough plaster; is at the north end of the building. Pupils sit facing the north, with light coming in from the east through three windows, each having an area of 12 square feet, and on the west by three windows admitting the same number of square feet of light. The building is heated by a stove situated near the middle of the room. The outside casing or walls are broken through in many places. Several bricks are out of the wall on the south, and the foundation on the north and a part of the walls extending above are weakened by displaced brick and mortar.

At the meeting of patrons referred to in the report on the inspection of No. 13 one of the citizens expressed himself as follows: "The foundation at No. 12 is about all gone on the north." The county health officer, Dr. Beck, with whom this inspection was made, expressed himself as follows: "I would not want to use the building as a stable for a fine horse." In the opinion of the teacher, Mr. Williams, the building is safe. In the opinion of the persons who made the inspection it is questionable, to say the least.

In this building each pupil has 15 square feet of floor space, and the light area is one-tenth of the floor area. The ceiling is 12 feet high. Eye-strain is very noticeable in this building. Pupils sitting in the rear have 48 square feet of light streaming in in front of them, and at right angles to the line of vision. There was some attempt made in this building to

ventilate it, and the air was in fairly good condition in the building at the time of the inspection.

Recommendations.—With reference to No. 12, it is the opinion of the inspectors that this building should be condemned as being, in all probability, unsafe, especially in case of high wind. The gables and tower of another brick building in the same county, similarly situated, were caved in and blown away a year ago. It is recommended, however, that the present term of school be allowed to continue in this building, the officers and teachers being cautioned to avoid any danger to the pupils as much as possible, but that a new building should be constructed before another term of school.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse, District No. 12, Marion Township, Boone County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse, District No. 12, Marion Township, Boone County, Indiana, is condemned for school purposes after June 1, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

Report of inspection of District No. 13, Marion Township, Boone County, Indiana, January 27, 1909, by John Owens:

Trustee, C. C. Howard, Sheridan, R. F. D. No. 21.

Site.—Two acres, fairly high, several trees, premises fairly well drained and located. One-half mile south of Terhune, Indiana.

Building.—Of soft brick, 30x40 feet, outside measurements. Old shingle roof. Building site east and west, on west side of road. This school district has been abandoned in the past on petition of the patrons. It has also been previously condemned by the State Board of Health, and this condemnation has never been removed. No school has been held in the building for at least a year previous to the present one, but at the present time the trustee is making some repairs with the idea of reopening the school very soon.

Upon inspection the following conditions were noted: The outside wall on the west side of the building is sprung, in several places two or three inches outside of the perpendicular. There are cracks under the windows on the north and south extending from the window sill down pretty well to the foundation. The inside casing or wall upon which the roof rests is cracked above the windows on the north and south, and these cracks extend from the top of the window to the ceiling above. In one instance the crack is at least three-fourths of an inch or an inch in width. The plasterers had covered these cracks by fresh applications of plaster. This plaster was taken off, and in the one instance referred to above the

large crack was revealed. This condition indicates, in the opinion of the inspector, that the inside walls are sinking under the weight of the roof, and in his opinion the building is unsafe. An instance of a large crack in the walls is also found in the inside wall above the door on the east side.

A meeting was held in a room in the little town of Terhune of the patrons interested in this and other schools in the community, and among the statements made are the following: G. M. Childress, carpenter, who claims to be perfectly familiar with the construction of buildings in general and this building in particular, said: "The inside walls of No. 13, which is the district building referred to above, are cracked on the inside over and above each window; the east and west walls are sprung out of the perpendicular. The west wall is sprung at least an inch, and the ties between the inside wall and the outside casing are broken in many places." Alfred Bogan, a workman who has been employed at this building, and Addison Spencer, a patron of the district, who has made an examination, also endorse the above. A number of other expressions of like character were made, and in addition the opinion was generally held that parents would be very unwise in sending their children to school at this building, and that unless compelled to do so by the law they would refuse to permit all such attendance.

Each pupil has 15 square feet of floor space, and the lighted area is equal to one-tenth of the floor area. The building is very near to two feet above the ground and there is no basement. It is heated by stove. The floors are in fair condition. The seats are old and dilapidated, double, nonadjustable and scarred with the jack-knife's initial, and in every way unfit for use under present conditions. The blackboard is painted on rough plaster; is on the west side of the building. Pupils sit facing the west. The light comes in from the north and the south. The well is said to be a deep driven well, and tin cups are used for drinking purposes. The ceiling is twelve feet high. No provision is made at the present time for ventilation. The attendance at this school in the past has been about forty.

Outbuildings.—The outbuildings are in very bad condition, especially the closets, which need to be made thoroughly sanitary and shields built around them and made to conform to the requirements of the law.

Recommendations.—In case of No. 13 it is recommended by the inspector, and the recommendation is concurred in by Dr. Beck, secretary of the county board of health, that the building be unqualifiedly condemned, and that school be not permitted to open in this building at the time designed by the trustee. It is furthermore the opinion of the above persons that the walls of the building are in such bad condition that it would be impracticable to attempt to repair this building. It should be torn down, and if another building is desired one should be erected in its place.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse, District No. 13, Marion Township, Boone County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse, District No. 13, Marion Township,

Boone County, Indiana, is condemned for school purposes after June 1, 1909 and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

Terhune, Ind.

This petition is to certify that we, the undersigned, agree that the schoolhouse at Elizaville, Indiana, District No. 6, Clinton Township, is not safe for school use. Trustee's name is Robert F. Swope, Lebanon, Indiana, R. R. No. 7.

Signed:

Will Sedwick.
Maud Sedwick.
Perry C. McDonald.
Lydia McDonald.
Mallissie Stephens.
S. Stephens.

Report of inspection of District No. 6, Clinton Township, Boone County, Indiana, January 27, 1909, by John Owens:

Site.—Low, muddy; few trees; fairly well drained; one-half mile north of Elizaville, east side of road.

Outbuildings.—Not in good condition.

Buildings.—Brick, two rooms, one story, iron roof. One to two feet from ground. No basement. Stove heat. The gable of this building was blown in a year ago and the tower was blown off. Building has since been repaired. The well is probably all right, but tin cups are used. Seats double, nonadjustable, in poor condition. Floors bad. Walls dirty brown. Ceiling paper falling off. Fire in fall burned out top of building and some of ceiling. Forty-five pupils. Eye strain very bad. No ventilation. Pupils face south, windows on east and west. Blackboard on south and east and west between windows. Light area one-ninth of floor space. Each pupil has 13 square feet of floor space. Boards poor and cross-lights for every pupil in room.

Upper Room.—Seats all sizes, double, nonadjustable, fairly good. Floors fair. Walls papered light brown; figured ceiling. Pupils face east. Board on east, north and south between windows. Light from north and west. Stove heat. No ventilation; air only fairly good. Pupils suffer eye-strain from every part of the room. Blackboards between windows is very objectionable. Boards are poor. Light area one-tenth of floor area. Each pupil has 15 square feet of floor space. The ceiling at this building is about 12 feet high. The walls are old and somewhat broken.

It is respectfully requested that the building be condemned as being unsafe and unsanitary.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse, District No. 6, Clinton Township, Boone County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse, District No. 6, Clinton Township, Boone County Indiana, is condemned for school purposes after June 1, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

Sanitary inspection of Lagro schoolhouse, Lagro, Wabash County, Indiana, March 20, 1909, by Dr. J. N. Hurty:

Site.—About $1\frac{1}{2}$ acres. Low, wet ground. In wet weather no playground. Lot too small. Cement walks leading to front and rear.

Building.—Built 1881. Faces north. Brick, two stories, no basement. Foundation cut stone on boulders. All walls good except west wall. It is about $5\frac{1}{2}$ inches out of line at top and cracked in several places. About fifteen years ago it was found necessary to brace the west wall. Sixty barrels of cement were used. Windows rattle when a man jumps up and down in the middle of the room. Heated by stoves.

The large front door, also the rear door have frames which are drawing away from the wall. It seems this was due to the settling of the building. All the rooms are lighted from three sides. Light is sufficient, but wrongly introduced. There are six windows to each room, each window having eight panes of glass, and each pane is 16×26 . The area of each room is 837 square feet, and each should therefore have 140 square feet of glass. They actually do have each 138 square feet.

Ventilation is only by windows and doors. Floors in passable condition. Desks old, worn and defaced. Blackboards painted black, not glossy, and are passable. The rooms are all of the same size— $31 \times 27 \times 14$, equal to 6,718 cubic feet, hence can accommodate 52 pupils each. Room No. 1, enrollment 44; room No. 2, enrollment 40; room No. 3, enrollment 37; room No. 4, enrollment 27.

Health of Pupils.—The health of the pupils is average. The usual coughs and colds and headaches abound, most all, of course, unnecessary. On very cold, windy days the schools are not convened because of not being sufficiently warmed. One patron told me his little girl came home and said that as she was quite warmly clothed the teacher had removed her from her seat near the stove and placed her remote from the stove where she got chilly and cold.

Opinion and Recommendations.—This schoolhouse is very unsanitary and never should have been built in the form it now is in. It is not a strong building, the west wall is cracked, there is no basement, and the

foundation under west wall has been reinforced, as heretofore told, with concrete. I recommend that the building be condemned.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Lagro, Wabash County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse at Lagro, Wabash County, Indiana, is condemned for school purposes after June 1, 1909, and if any school trustee, trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

Sanitary survey of schoolhouse at Arlington, Rush County, Indiana. Survey made March 25, 1909, by J. N. Hurty.

Site.—The site is far from being ideal. It has about one-half acre, which does not furnish sufficient playgrounds, and has never been graveled. In wet weather the grounds are muddy, no paths leading to the outhouses.

Building.—The building is brick with stone foundation. Built in 1884. It has two stories and four rooms, two above and two below. There is a crammed vestibule from which the stairs rise to the upper floor. These stairs are the worst I have ever seen. The first flight arises about ten feet, are very steep and end in a narrow landing. The ceiling above this landing is not over six feet high. Two narrow, steep box stairways lead from the landing to the upper floor. They are so steep and so narrow, the ceiling above so low they might be well termed "ladders." The rooms are each 30x24x14 feet, and therefore contain 10,080 cubic feet. Each room is lighted with seven windows, the same being placed on three sides, and each window has eight panes of glass, each pane being 15x20 inches. The light is therefore sufficient in amount, but being on three sides, is wrongly introduced.

High School.—The high school is in the east room on the second floor. It has an enrollment of 30 pupils, average attendance 35. The capacity of the room is 44 pupils. The teacher reports that grippe, chickenpox, coughs and colds exist the winter long. This room, like all others, is heated by stoves.

Room No. 3—Enrollment 34, average attendance 30.

Room No. 2—Enrollment 44, average attendance 40.

Primary Room—Enrollment 40, average attendance 35.

Summary.—The floors in all the rooms are in poor condition, being much worn. The desks are most of them old, and none of them adjustable. I observed some large sized children sitting in cramped position in desks which were too small. There is no provision for ventilation except by windows and doors, and all rooms are heated by stoves. In every room

the wall paper is coming off, and in some of them the paper is hanging from ceiling and side walls. One teacher told me of pupils who were suffering with eye strain, as they complained of eye ache and headache. The outhouses are abominable and too awful to be described. There are no walks leading to them. This schoolhouse is unsanitary in every particular and should never have been built in the first place. I recommend its absolute condemnation.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Arlington, Rush County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse at Arlington, Rush County, Indiana, is condemned for school purposes after June 1, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

Report of sanitary survey of schoolhouse at Beaver Dam, District No. —, Franklin Township, Kosciusko County, Indiana. Survey made March 26, 1909, by Dr. C. W. Burket, Secretary.

Austin Blue, trustee of Franklin Township.

Harry Thomas, H. L. Meredith, Russell Norris, advisory board of Franklin Township.

Site.—The school yard covers about one-half acre and is well situated. The ground is level, soil a sandy loam and natural drainage good.

Building.—The building is a two-story brick 35x39 with a stone foundation; no basement and built in 1881. The roof is of slate and in bad condition, as the walls and ceiling in every room present plenty of unmistakable evidence of leakage. Outside walls on northeast corner are cracked from lower door to top of second story, and also above front entrance on north side. The main entrance to the building is on north side midway between east and west sides. The room first entered is 6x26 and contains two winding stairways, each thirty-five inches in width, leading to the second floor. The primary room on the first floor is entered from this room also. The room is well lighted but no provision for warming.

Primary Room.—The primary room is on the first floor and is 29x32, and is lighted by four windows on the east and four on the west. Each window contains eight panes of glass 12x20 inches. Total number square feet of light 107, or nearly nine times as much floor space as light. Besides the front entrance to this room it may be entered at both the northeast and northwest corners through small rooms 3x6 in size. These two small rooms are used for cloak rooms and cannot be warmed. This room

is heated by a stove located about the center of the room. There are no ventilating shafts. There are thirty-six desks in this room.

Second Floor.—Originally this was a two-room building with a room on the second floor the same size as the one just described and lighted by eight windows, each containing eight 12x18 panes of glass. About twelve years ago a studding partition was put in, making two rooms 16x20, each lighted by four 12x18 light windows, or about ten square feet of floor space to one of light. These rooms are heated by stoves, with no means of ventilation except by windows. There are twenty-one desks in each of these rooms. Wraps are hung in the hall occupied by the stairway, which cannot be warmed.

Enrollment.—The enrollment at present is 73, and will be very materially increased next year, as there will be at least one school near to this that will be abandoned at the end of this year and the children will be hauled to this school.

Outhouses.—The outhouses are of brick and in a tumbledown condition.

Recommendations.—Since this building has no basement, is insufficiently heated, lighted and ventilated, and inadequate in size, I recommend that it be condemned for school purposes.

C. W. BUBKET, M. D.,

Secretary Kosciusko County Board of Health.

EDSOM E. SABBER,

County Superintendent Kosciusko County.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Beaver Dam, Franklin Township, Kosciusko County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse at Beaver Dam, Franklin Township, Kosciusko County, Indiana, is condemned for school purposes after June 1, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

March 24, 1909.

To the Indiana State Board of Health:

We, the undersigned, respectfully petition your Honorable Board to make inspection of the schoolhouse at Trafalgar, known as District No. 1.

Hensley Township, Johnson County. The name and address of the trustee is Sanford Richardson, Trafalgar, Indiana.

S. A. Nalle, Mgr. Ind. Co-oper. Mer. Assn.

F. E. Kennedy, Farmer.

L. T. Deer, Farmer.

M. M. Pitcher, Farmer.

Otis Bridges, Farmer.

R. W. McDaniel, Farmer.

M. L. Rose, Grocer.

J. R. Bridges, Farmer.

Ed Alexander, Hardware and furniture.

W. B. Vanarsdall, Carpenter.

C. E. Ragsdale, M. D.

Wm. P. Chambers, Pool room.

W. H. Kelch & Son, Hardware.

By Oran A. Province, Secretary Johnson County Board of Health, April 1, 1909.

Site.—Schoolhouse at Trafalgar, Johnson County, Indiana, is located in the west part of the town on the south side of the main public highway and thoroughfare. Said schoolhouse is in a low sag where the water does not drain off properly, and as a result thereof the water stands almost entirely around the house during rainy weather.

Building.—The building is a brick structure erected about thirty years ago, facing north toward the public highway. An idea of the shape of the building may be obtained from the enclosed picture. The foundation in several places is crumbling and many brick are entirely missing. There are several large cracks about the different windows as marked on enclosed picture. Running through the house from north to the south are two large iron rods which have been placed there to prevent the south wall from bulging out, as it had begun to do. The walls are out of plumb from improper construction and settling of building. The entrances to the building are two in number, located at the northeast and northwest corners of building. These lead into a narrow hall in north wing of building.

Hall.—The hall is narrow and not more than eight feet in breadth and about twelve feet in length. In this hall are hangers for the coats and hats. The floor is in bad condition, being worn uneven and broken through in several places. On the north side of this hall is a narrow three-foot stairway leading up to the second floor. This stairway has two sharp turns in it, making it dangerous in case of fire, as it is the only exit from the second floor.

There are in all four rooms in the building, two above and two below. The entrances to the lower rooms are from the main hall.

Room 1.—This room is called the primary room and is located in the east half of the lower floor. Upon entering this room one is deeply impressed by the dark, smoky, dirty, dingy walls.

The plastering is badly cracked and has fallen off in places and has been patched, showing white and black areas over walls and ceilings. The

floor is in bad condition, being warped, uneven, broken and worn through in numerous places, making good sized holes. The blackboards are cracked and show here and there large white patches. The desks are old, cut up, broken, rickety and the sizes are improper. The room is heated by an old stove. The door leading out from the room is old and worn, having a large space beneath it. The windows are four in number, two on the east, one on the north and one on the south. They are small and have no blinds over them. They are covered on the outside with a strong wire netting, making exit impossible except through a narrow door leading to the main hall on the north. This room is entirely too small according to the number of desks it has in it.

Room No. 2.—This room is occupied by the third, fourth and fifth grades and is located in the west half of the lower floor. The walls are dirty, cracked and a large hole is to be found in the ceiling where the plaster and the laths have fallen off, showing birds' nests in the attic.

The blackboard is worn off over large areas and is badly cracked in more than a dozen places. The floor, as in Room 1, is warped, cracked, uneven, broken and worn through in many places. The desks are old, cut up, broken, rickety and ill in sizes, and there are too many in the room according to the space. The room is heated by a small stove which, as in Room 1, stands near the center of the north wall, thus making it impossible to heat the south portion of the room. There are four windows in this room, two on the west, one on the north, one on the south. They are small, have no blinds and are covered with heavy wire netting on the outside. Large openings can be seen around and under the door leading to the main hall. Rooms 1 and 2 are certainly the most dilapidated, worst looking rooms I have even seen that were called school rooms. The entrance to the upper floor is gained by a narrow three-foot wide stairway leading from the hall on the north side of the building.

Rooms 3 and 4.—Are located in the east and west half respectively of the second floor. They are separated from each other by large sliding doors, and may be described as one room, as the doors are open at the present time. Room No. 3 is occupied by the sixth, seventh and eighth grades. Room No. 4 is occupied by the high school. The plastering in these rooms is cracked in numerous places, is dirty, dark and smoky, showing many white areas where it has been patched.

The floor is in bad condition throughout the entire second floor, being warped uneven, cracked and broken through in many places.

The blackboard is in bad condition, being cracked and worn off in many places. The desks are old, broken, cut up and rickety.

The light is insufficient on account of few and small windows. Ventilation is also poor on account of the same reason.

A person walking across the floor in either of the two upper rooms shakes the whole building. These rooms are heated by two small stoves located on the north side of each room, making it impossible to heat the south side of said room.

The patrons are in the habit of sending word to their children during a storm or high wind to come home or to get out of the schoolhouse for fear of it falling down, as it shakes very perceptibly during such times. I have been in many schoolhouses during my life but this is certainly the most dilapidated and unsightly throughout its entirety that I have

ever seen. It is difficult to pick out a few things and say that they are at fault, for everything about the building *and in it* looks poverty stricken and dilapidated. Sanitary conditions both within and without the building are poor. The pupils are subject to headache, eye strain, coughs, colds, etc., because of improper heating, ventilation and light.

As secretary of the Johnson County Board of Health I would advise immediate condemnation of said building and order the trustee to begin at once plans for a new structure.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Trafalgar, Johnson County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That said schoolhouse at Trafalgar, Johnson County, Indiana, is condemned for school purposes after June 1, 1909, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes or teaches therein after the date above mentioned he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

March 23, 1909.

To the Indiana State Board of Health:

We, the undersigned, respectfully petition your Honorable Board to make inspection of the schoolhouse at Cloverdale, an incorporated town, Cloverdale Township, Putnam County. The name and address of the trustee is W. E. Gill, Uly Leny.

Louis Morrison, real estate.
 Chas. S. Hunter, laborer.
 John O'Mullane, laborer.
 A. R. York, druggist.
 J. W. Thornburgh, teacher.
 Jesse E. McCoy, manager hardware.
 Andrew V. McKenny, clerk.
 W. N. Evens, tailor.
 L. L. Runyan, blacksmith.
 G. C. Wingfield, station agent.
 J. F. Akins, shoe cobbler.
 J. F. Richardson, blacksmith.

Sanitary survey of schoolhouse and grounds at Cloverdale, Putnam County, Indiana, made April 5, 1909, by J. M. King, M. D., Secretary County Board of Health:

Site.—The school grounds are in the northern part of town and the site is a good one. The land in this vicinity slopes to the west. The site is the west half of the block and may, therefore, receive the drainage from

the east half. The school grounds are 317 feet by 161 feet, and have forty or fifty maple trees of good size scattered over the area. The east side of the grounds is about eighty feet higher than the west side, the slope being quite uniform. The soil is clay. There is no gravel nor sand.

Water Supply.—The water is supplied from a dug well, which is situated about twenty feet from the school building. The well is covered by a large, flat stone top and is about 30 to 40 feet deep. The water I believe to be good.

Outhouses.—Outhouses are situated at the east edge of the lot. The one for girls is a new building and in very good condition. The one for boys is old, dilapidated, filthy and noisome. Both outhouses are built of cheap lumber. Crude board walks lead from the schoolhouse to each outhouse.

Building.—The school building is an old frame structure, probably thirty-five years old. It sometime was painted, but the paint is now entirely all worn off. The roof is tin, has been on twelve years, but has been kept painted, and does not leak. The main building is 30 ft. by 60 ft. and is two stories high. There is also an entrance hall on the west center 22 ft. by 10 ft. The stair way to the second story was formerly in this hall, but recently a new stair way has been built on the outside, and the inside stair way has been abandoned. The foundation on the west side of the building is 18 in. above the ground, and on the east side the floor is on the level with the ground.

The two main rooms on the first floor are 30 ft. by 30 ft. with a door on each side and windows on three sides. The doors are old, battered and do not fit the casing, and the windows old, frame rotten and parts of sash gone. The windows all rattle on the slightest touch. The floor in one room is of oak, has been oiled and is a good floor, but in the south room, the floor is poplar and is completely worn out. The windows for the first story have solid wooden shutters on the outside. I do not know of what service they are.

The second floor is similar in every way to the first floor. The stair way is a flimsy pine affair, four feet wide, and where it passes through the second floor, the second floor is just high enough to miss the head. It is the only exit from the second floor, and constitutes a very bad fire trap. The teachers and pupils complain concerning the difficulty of keeping the rooms comfortable, especially on windy days, there being but one register in each room.

The heating is by two large hot air furnaces (Peck-Williamson) that are in good condition. The hot air pipes are all covered with asbestos wrapping. There is only five inches space between the top of the furnace and bottom of the joists above. The air supply to the furnaces proceeds from the cellar and not from the outside as it should. The hot air pipe carrying heat to the upper rooms passes through the lower rooms in a corner and is very unsightly.

Conclusions.—The building is old, dilapidated, unsafe, and unsanitary, insufficiently and wrongly lighted; also insufficiently and wrongly heated. The ventilation is miserable. I talked with several of the business men of Cloverdale and they all agree that they need a new school building. The school trustees of the town, and the township trustees have met several

times and are working on a plan whereby the town and township can erect a building together.

Recommendations.—I recommend that the schoolhouse be condemned by the State Board of Health.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Cloverdale, Putnam County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Cloverdale, Putnam County, Indiana, is condemned for school purposes, after June 1st, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

March 24, 1909.

To the Indiana State Board of Health:

We, the undersigned respectfully petition your Honorable Board to make inspection of the schoolhouse at Deedsville, known as District No. 3, Union Township, Miami County, Ind. The name and address of the trustee is G. E. Leedy, Deedsville, Ind.

W. Kindig, farmer.
E. O. Deeds, farmer.
Louise Fleyer, boarding house.
J. C. Fritz, M. D.
C. J. Miner, minister.
R. A. Robins, carpenter.
B. A. Leedy, carpenter.
L. B. Rink, clerk.
W. C. Lee, farmer.
O. A. Moody, blacksmith.
P. H. Kindig, lumberman.

Sanitary survey of schoolhouse at Deedsville, Miami County, Indiana, made April 5, 1909, by O. R. Lynch, M. D., Secretary County Board of Health:

Site.—The site is on Main Street in the east part of town. It is high with a slight slope to the east. The school yard is 370 ft. long and 165 ft. wide and well sodded. There are three good trees on the school grounds.

Water Supply.—The drinking water is supplied by a drilled well 63 ft. deep, square platform built around pump, but no trough or drain to carry away waste.

Approaches.—No approaches to building nor outhouses.

Outhouses.—Outhouses are in bad condition, built on surface 100 ft. apart and 150 ft. from the school building. No privacy for pupils.

Building.—The exterior is very much weather beaten, built in 1880. Never painted. Building faces the north. About two feet from ground—stone foundation. Shingle roof which is in bad shape. Front steps 8x8.

Interior: There are four rooms, two on the first floor and two on the second, but only three are used for school purposes, the fourth being a plunder room. There are two hall ways, 20x15 feet, one below and one above. In each hall way there is a cloak room about 5x8 feet. There are two stair ways, one for each side, which is three feet and two inches wide, and badly worn in places. Strips are nailed over the weak places. Hall ways are plastered, but large holes are many and prominent. Walls in hall ways not papered. From description it is plain that in case of fire, these stair ways would constitute a fire trap.

Primary Room.—Primary room is 20x21x11 feet. Seating capacity 30. Five windows, 2 on south side, 2 on east, and 2 on north. Entrance door is on the north from hall landing. In this room the children face the west. Wainscoting 3½ feet and varnished, slate blackboards. The walls of this room are papered. It is lighted from three sides as stated, the glass area being sufficient. Ventilation by windows and doors. Heated by stoves. Floor is very much worn, and patched in places, dirty and could not be kept clean. Floors are weak and an adult jumping up and down on the upper floor shakes the whole building. By a very slight effort, one can make the windows rattle. The general condition of the inside is poor, dirty, unsanitary, improperly heated, lighted and dangerous to the lives of the pupils.

The other three rooms are like the one just described. The seats are in good condition, and constitute the only condition worthy of praise about this schoolhouse.

Recommendation.—I recommend the condemnation of the schoolhouse at Deedsville.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Deedsville, Miami County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Deedsville, Miami County, Indiana, is condemned for school purposes, after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

Bean Blossom, Ind., February 1, 1909.

We earnestly plead for you to come and see the condition and the surroundings of our school building.

The building which was built in 1876, is a common wooden structure 24 feet by 26 feet and 9 feet high with a double floor. The attendance is 47. The building is heated by one stove, which causes the pupils nearest the stove to suffer with heat, while the other half suffer with cold.

The building is located in a low place and has three old stables on as many sides within fifty feet of the building.

We understand that the appropriation by the state wasn't sufficient to pay your traveling expenses, so if you will come, we will gladly pay your fare and will meet you at the station and take you to the building and furnish you dinner.

Our railroad station is Helmsburg, which is on the Indianapolis Southern R. R. A passenger train leaves the city at 6:30 o'clock in the morning, and returns at 2 in the evening.

Hoping in the name of the children to hear from you, we remain, yours.

Virgil C. Gugg.

J. W. Deringer, J. P.

Cecil H. Zody.

Wm. Dowden.

C. W. Moore.

Report of inspection at Bean Blossom, Brown County, Indiana, April 7, 1909. by John Owens:

Site.—High, flat, one-half acre. No well, outbuildings in bad condition.

Building.—Frame, iron roof, one to two feet from ground, on rocks. One room, two stories high. Upper room used for Masonic Lodge room. Building sits east and west, 34x21 feet.

Room Conditions.—Floors poor, painted and ceiled sides and ceiling. Stove heat and no ventilation, four windows on each side, north and south, each admitting 12 square feet light. Seats double, nonadjustable, much scarred. Blackboards, painted planks on east side room. Light area one-ninth floor area. School not in session. Number of pupils not determined. Box stove used for heating.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Bean Blossom, Brown County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Bean Blossom, Brown County, Indiana, is condemned for school purposes, after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

March 5, 1908.

We, the undersigned patrons of Hamblin township, Brown County, District No. 2, pray that you use your power to have erected two water closets at the above named schoolhouse, as at present, there is no place for the pupils to go, as the schoolhouse is on a public road. We have no water fit to drink and the children have to bring water one-half mile through rain and mud, and then get it out of a branch.

Signed:

Frank Dougherty,
Albert Hogan,
Jesse J. Coats,
James Gillaspy.
John T. Ratliff,
Harry Anderson,
C. W. Scudder,

C. W. Phipps,
C. A. Mullinix,
W. B. Henderson,
Charlie Anderson,
Marion Cowin,
Jesse Miller,
And others.

Report of inspection of Ray School, Hamblin Township, Brown County, Indiana, April 7, 1909, by John Owens:

Site.—High, wind swept. Good drainage.

Building.—Frame, one to two feet above ground, on large rocks. Good roof.

Closet Conditions.—Very bad; should be condemned. A good well has been provided.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the Ray Schoolhouse, Hamblin Township, Brown County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said Ray schoolhouse, of Hamblin Township, Brown County, Indiana, is condemned for school purposes, after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

March 24, 1909.

To the Indiana State Board of Health:

We, the undersigned respectfully petition your Honorable Board to make inspection of the schoolhouse at Lewis Creek, known as District No.

3. Washington Township, Shelby County. The name and address of the trustee is Wm. Porter, Flat Rock, Ind.

C. H. Perry, physician.
 B. F. Drake, day laborer.
 J. C. True, day laborer.
 Melvin Jackson, school teacher.
 Daniel E. Cochran, clerk.
 Ora Spurlin, farmer.
 Bud Cochran, carpenter.
 C. M. Drake, telephone manager.
 W. R. Fair, farmer.
 Fillman Sullivan, railroad.
 Chas. Kinnaman, railroad.

Inspection of Lewis Creek schoolhouse, District No. 3, Washington Township, Shelby County, Indiana, made April 8, 1909, by C. H. Perry, Secretary:

I find the schoolhouse to be a red brick structure on a stone foundation. The stone foundation is two feet above the grade and the brick work twelve feet and six inches to the eaves. The roof is slate, with a belfry on top. The building faces the east. The outside appearances of said building are good except the building is in a rather low place, the most of the town being on a rather higher plane.

Said building consists of two rooms, the dimensions of each being twenty-nine feet and six inches by twenty-six feet eight inches with twelve foot ceilings, and a hall between the rooms twelve feet six inches wide, of which fifteen feet is cut off and divided into two cloakrooms on the back or west side.

The entrance to said building is through double doors seven feet high by five feet three inches wide, into the center of the hallway, the doors only swinging out.

The building is calcimined and plastered throughout. The plastering is cracked and very badly smoked. The floors are badly worn and splintered, being of hard pine. The casing is of hard pine and in fair condition except the lack of varnish.

You enter the south room from the hall, through a door seven feet six inches by three feet, said door being seven feet from the northeast corner of said room. Said room having five windows on the south side, spaced two feet apart and three feet from each corner, and two windows on the east side, four feet apart and each seven feet, eight inches, from each corner. Said windows all being two feet from the floor. Said windows containing two sashes, each sash consisting of one pane of glass 42 inches and of the patent type. The flue in said room is in the northwest corner. The stove being five feet from the northwest corner. No ventilators.

You enter the north room from the hall through a door seven feet six inches by three feet. Said door being 7 feet from the southeast corner of said room. This room contains five windows on the north side and two windows on the east side, the spacing and dimensions being the same as the south room. Said room containing one flue in the southwest corner, the

stove being a space of three feet from said flue. Said room containing fifty-six patent seats facing the south. No ventilators. Blackboards of both rooms amply sufficient.

Basement under building four feet deep, containing foul smelling gases and which during the wet seasons, has been known to contain water two feet deep.

The area of school lot is about one and one-half acre.

An old mill race runs through said lot, in which there is a continuous stream of water during the winter season. The playground is rather small from the low condition of certain parts. No walks or pavements on said lot. Water closets in very bad condition. No drainage, no steps, no doors, blinds practically all down.

A good tubular well on said grounds.

The enrollment of the two rooms has been ninety-five. As many as fifty-six in the north room and thirty-nine in the south. The work of said school consists of all of the common school work, plus three years high-school, which is much more work than any two teachers can accomplish. Owing to the crowded condition of said building, it is impossible to ventilate, there being no ventilators.

Owing to the improper heating system, some children in the opposite corner from the stove have been known to suffer extremely from the cold while those near the stove would suffer from the heat. I have personally known of various catarrhal affections arising from this poorly ventilated and heated schoolhouse.

Owing to the above recited facts and especially to the very much overcrowded, poorly ventilated and poorly heated systems, I respectfully recommend to your honorable body that you condemn the above said schoolhouse, believing that it would be much better for the pupils of the above said school to remain at home and grow up in ignorance, than attend such an unsanitary school where their health is so liable to be impaired and thus destroy their future usefulness.

I further recommend that your honorable body instruct the trustee of Washington township to at once proceed to erect a four room school building at Lewis Creek, and to build said building according to the instructions of the Indiana State Board of Health.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Lewis Creek, District No. 3, Washington Township, Shelby County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Lewis Creek, District No. 3, Washington Township, Shelby County, Indiana, is condemned for school purposes, after June 1st, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health April 9, 1909.

PETITION.

March 23, 1909.

To the Indiana State Board of Health:

We, the undersigned respectfully petition your Honorable Board to make inspection of the schoolhouse at District No. 9, Union Township, Parke County, Indiana. The name and address of the trustee is W. S. Seward, Bellmore, Ind., R. R. No. 1.

Charles Davis, farming.
 B. A. Wimmer, farming.
 J. H. Berry, farming.
 James Wolverton, farming.
 W. P. Blake, farming.
 W. P. Wirman, farming.
 F. H. Thomas.
 S. H. Jeffries, Jr., farming.
 Henry Jeffries, farming.
 Abe Lee, farming.
 John E. Swaim, farming.
 F. M. Overpeck, farming.
 J. W. Davis, farming.
 C. N. Snider, farming.
 S. T. Davis (per Chas. Davis), farming.

Sanitary inspection of schoolhouse, District No. 9, Union Township, Parke County, Indiana, made April 16, 1909, by O. E. Maddox, secretary:

Site.—The site for the building is good, high, well drained, situated on gravel pike, east front. There are no walks. Outhouses a good distance from main building.

Building, is an old frame, built in 1860, the smallest and worst lighted school building I was ever in. Size, 25x21 feet. Ten-foot ceiling. Windows, two narrow windows on the south, east and north sides, each containing 8 panes, 12 inches by 18 inches (six windows total).

Floor in fair condition, about two feet from ground. Seats old and dilapidated. Stove in the middle of this small room, with no ventilation at all. The windows are the smallest I ever saw in a school building, and I hardly see how they conduct a school on a dark day.

Enrolled 21 scholars the past year.

A good driven well for water supply, so this is all right.

I had a talk with the trustee, W. R. Seward, and he is inclined to be very reasonable. This is the same township where the Bellmore school was condemned last year, so they know what it means. He says that if this building is condemned, he intends moving the site one-half mile north to the cross roads, and consolidating, so that he can increase the attendance. He also desires to know as soon as possible what will be done, so that if he has to put in a new building, he can get at it in time to have it ready for the beginning of the school year. I told him I did not think he would be permitted to use this old building any more, but that I would ask you to write him as soon as possible in regard to the matter. If you can give him your decision without waiting for the next meeting of your Board, I

would do so, and I think he will proceed. I would also suggest that you send him the plans you have for a model one-room building. Trustee's address is W. R. Seward, Bellmore, Ind., R. F. D.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse known as No. 9, Union Township, Parke County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse, District No. 9, Union Township, Parke County, Indiana, is condemned for school purposes after June 1st, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Ordered by the State Board of Health April 19, 1909.

Communication from Mr. Barnard:

State Board of Health:

Gentlemen—We have been operating under the Pure Food and Drug Law for two years, with, I believe, satisfactory results. There are, however, several questions confronting us in our work which must be settled soon, and I take this opportunity to bring them to your attention. Some of these questions do not involve any action of your Board, but are of such moment that I hesitate to take them up until they have been fully considered by you.

The first question involves our action in regulating the manufacture and sale of bleached flour. As you know, Food Inspection Decision, No. 100, dated December 9, 1909, and signed by James Wilson, Secretary of Agriculture, provides that flour bleached by nitrogen peroxide is an adulterated product under the Pure Food and Drugs Act of 1906; that the character of the adulteration is such that no statement upon the label will bring bleached flour within the law, and that such flour cannot legally be made or sold in the District of Columbia or in the territories, or be transported or sold in interstate commerce. Since the promulgation of this decision, which was signed by every member of the Board of Food and Drug Inspection, which after an exhaustive hearing of both those who favored the bleaching process and those who opposed it, the leading mills of the country have abandoned the use of the bleacher. Certain interests, principally those backed by the owners of the patents of the bleaching process, have fought the decision bitterly, and have endeavored in every way, but without success, to have the case reopened. Since the decision of the Board of Food and Drug Inspection several of the States have made similar decisions.

There are several hundred millers in the State of Indiana, many of whom are now operating bleachers, who are anxious to know what action will be taken in regard to the bleaching process in the enforcement of our Pure Food Law. After June 9, 1909, they can ship no bleached goods out

of the State, but so far as the federal regulation is concerned they may continue business within the State of Indiana. The Pure Food Law, which we are enforcing, unquestionably prohibits the manufacture and sale of bleached flour. Two courses are before us. Shall we enforce the law after first advising the trade as to our action as was done by the Federal Government, or shall we overlook the matter of the bleaching of flour and allow goods so prepared to be manufactured and sold in violation of the law? I quote a letter recently received from the Daniels & Pickering Co., Middletown, Henry Co., Ind. These millers have no bleaching apparatus in their plants, and do not wish to install one. They say there is no question but what millers using a bleacher have a decided advantage over those who do not, and they ask the pertinent question, "What then are mills like ours to do? Sacrifice our trade even to the point of bankruptcy in order to be law abiding while the other fellow goes serenely on in his unlawful method? Are you giving such mills as ours a fair deal in taking your view of the matter and in the course you are following? We do not wish to criticise you or your rulings, but if the present course is fully determined upon, it leaves no option but to follow the illegal and despicable methods of our bleaching competitors, or else sacrifice a large portion of our business."

The baking industry is opposed to the bleaching of flour. The National Association of Master Bakers which met at Indianapolis last summer adopted the following resolution:

"Resolved, That this Association requests the Pure Food Commission of the United States Department of Agriculture to have all bleached flour so branded on the package, as we believe that the baker is entitled to know whether the flour he is using is bleached or not, although the bleaching process may not be detrimental to the food value of the flour."

The packers of Indiana are even more outspoken against the process. At the last meeting of the Indiana Master Bakers' Association, Mr. J. J. Casper, one of the leading members of the Association, who is a miller as well as a baker, said of bleaching, "The chemical bleach is for one single purpose. As an agent of the Alsop process told me, you can make more patent flour. I do not mean that it would make the quality better. You can make 90 per cent. patent. It is mostly used to make a quantity of patent flour which will not expand as much as the higher qualities, consequently when the baker uses a barrel of flour which is not straight flour he loses ten or fifteen loaves on the barrel." It is seriously contended and to the satisfaction of many, that the nitrates present in the bleached flour are injurious to health. This may or may not be the case, but leaving it out of our consideration of this important question of flour bleaching, there are ample reasons why we should follow the action of the Federal Government and put a stop to the process.

THE USE OF ALUM.

What course shall we pursue in regulating the use of alum in pickles? We are constantly asked by pickle manufacturers to define our position in this matter and I have thus far answered by saying that the matter had not as yet been considered. It is impossible longer to consider this policy of procrastination, and I trust that your board will advise me as to what

action we should take. The use of alum in pickles is unquestionably a violation of the Pure Food Law. Pickles can be and are put up without the use of alum, but it is still employed by many pickle manufacturers for the sake of making a crisp product out of a naturally soft vegetable. Shall the use of alum for the time being be allowed, or shall we inform the pickle manufacturers, before the opening of the pickling season, that goods packed in this state for sale, within the state, must hereafter be free from alum?

HEARINGS.

Rule 6, adopted by your Board March 15, 1907 provides for hearings before the Secretary of the State Board of Health and the State Food and Drug Commissioner, in cases where the owner, proprietor or agent of any firm or corporation is notified by an inspector of the State Board of Health that his place of business is not conducted in accordance with the law, and fixes an hour he may appear to give reasons why the conditions noted by the inspector existed and why he should not comply with the order of the inspector or be prosecuted. The new sanitary law makes the same provisions. If another rule were adopted providing for hearings in the case of violation of the Food and Drug Law, through the sale of adulterated or misbranded articles, I think it would be possible for us to work with better advantage than at present. I have recently, without specific authority, given several butchers and meat men an opportunity to be heard upon the question of the use by them of adulterants in sausage. And I believe that as a result of the hearings, we have accomplished more than would be possible if we had taken the cases directly to the courts. Is it advisable to continue this method of operation?

BULLETINS.

Questions constantly arise concerning the enforcement of the law in which we are asked by individuals or by associations for advice. This we endeavor to do as fully as possible by instructions to inspectors and by personal letters and I believe that we can do such work better if bulletins are issued through the monthly bulletins, and the press of the state whenever it would be advantageous to us and to the business or people concerned. These bulletins would have no legal weight. They would merely be official opinions of the department upon points not fully understood, and they would be received as such. We have already made use of such bulletins, especially in our work of last year in assisting the druggists to relabel their old goods. I suggest that the bulletins be given official recognition by the board and that it be ordered that each bulletin hereafter be given a number and a title.

DAIRY CONVENTION.

At the mid-winter meeting of the State Dairy Association, considerable time was given by those in attendance to the work of the Food Department of the State Board of Health and its endeavors to improve the character of the milk supply. At the meeting it was voted to ask for legislation regulating the sale of oleomargarine and renovated butter, and that a corps of dairy inspectors be appointed by examination who should take up the dairy work now under way. At the request of the executive committee of

the association, I prepared several bills, among them an oleomargarine and a renovated butter bill and a bill providing for dairy inspectors, all of which were introduced at the last session of the legislature, but which failed of passage because of the absolute indifference of the men who asked for the legislation. In view of the apparent inability of the state dairymen's association to offer us assistance in improving the quality of the milk supply, I believe we are fully justified in conducting our campaign as it seems best to us. I suggest therefore, that at this time arrangements be made for holding a convention of the dairymen of the state at Indianapolis, preferably during Fair week in September. This convention should be conducted along the lines of the convention held last year, but should be so thoroughly advertised that every dairymen of the state will realize its importance and endeavor to be present.

BULLETIN ON SANITARY MILK PRODUCTION.

Since our work with the milk men is largely a matter of education, we should be provided with literature, charts and other printed data which we may study and use for reference. No such material is available at the present time so far as I can determine except the bulletins issued by the Department of Agriculture, and I suggest that you authorize the compilation of a bulletin on Sanitary Milk Production, in an edition of such size that it may be freely distributed.

THE SANITARY FOOD LAW.

The Sanitary Food Law passed at the last session of the Legislature is conceded to be the most important and far reaching legislation on the subject of food that has been enacted since the passage of the Federal Law. The sanitary production and distribution of food is so regulated that unclean food, unsanitary buildings, and diseased workmen will be impossible. In taking up the enforcement of the law we are confronted with this proposition: Shall the law be enforced rigidly, as was the evident intention of the legislature, or shall the inspectors use it as an argument for improved conditions rather than as a club to compel them? Under the rule adopted two years ago by your board, the display of uncovered *prepared food products* is prohibited. The new law goes further and says that *all food products* must be protected from dust, dirt and flies. Shall we interpret this section of the law to mean that meats within the store of the butcher are to be covered, and that fruits and vegetables are no longer to be displayed on the sidewalk? What shall be our position on these two propositions?

After discussion the following letters were adopted and ordered sent out:

CIRCULAR LETTER No. 1.

SUBJECT: BLEACHED FLOUR.

To the Millers and Flour Merchants of Indiana:

The controversy over the bleaching of flour by nitrogen peroxide has been finally settled by Food Inspection Decision No. 100, issued by James Wilson, Secretary of Agriculture, and the manufacture and sale of bleached

flour in the District of Columbia and the Territories and its transportation for sale in interstate or foreign commerce, prohibited after June 9, 1909.

The Indiana Food Law contains the same provisions applying to bleached flour as the Federal Food Law.

According to an order of the State Board of Health issued April 9th, 1909 you are hereby advised that the sale of flour bleached with the oxides of nitrogen is in violation of the law and that such sale will be contested on and after June 9th, 1909, except in cases when the barrel, bag, sack, or other receptacle has on its head or side as a part of the principal label the words "BLEACHED FLOUR" in plain black Gothic letters, at least one inch in height.

.....,
State Food and Drug Commissioner.

Approved, April 9, 1909.

.....President, State Board of Health,
.....State Health Commissioner.

CIRCULAR LETTER No. 2.

SUBJECT: ALUM IN PICKLES.

To the Pickle Manufacturers, Wholesale and Retail Grocers of Indiana:

According to an order of the State Board of Health issued April 9, 1909, you are hereby advised that the manufacture for sale within this State or the sale of cucumber, onion or other pickles prepared with alum is in violation of the Pure Food Law of March 4, 1907, and that such manufacture and sale will be contested on and after September 1, 1909.

.....,
State Food and Drug Commissioner.

Approved, April 9, 1909.

.....President, State Board of Health,
.....State Health Commissioner.

CIRCULAR LETTER No. 3.

SUBJECT: SIDEWALK DISPLAY OF FOOD STUFF.

To the Wholesale and Retail Dealers in Food Products of Indiana:

Section 2 of Chapter 163 of the Acts of 1909 regulating the sanitary production and distribution of food reads in part as follows:

"For the purpose of this act unclean, unhealthful or unsanitary conditions shall be deemed to exist if food in the process of manufacture, preparation, packing, storing, sale, distribution or transportation is not securely protected from flies, dust, dirt, and, as far as may be necessary by all reasonable means from all other foreign or injurious contamination."

The custom of displaying such products as fruits and vegetables on the sidewalk or outside the place of business is clearly prohibited under the law unless such goods are securely protected from flies dust, dirt, and all other possibilities of contamination.

In order that this provision of the law may be clearly understood, the State Board of Health on April 9th issued the following order:

Fruits, vegetables, and other food products must not be displayed or stored on the sidewalk or outside the place of business unless they are securely covered by cases of glass, wood, or metal or enclosed in tight boxes, bags or barrels, and all such cases or containers shall be raised at least two feet above the sidewalk. The practice heretofore followed of covering small fruits with screens or nettings is not a sufficient compliance with this order. This order shall not however, apply to fruits and vegetables which have to be skinned or peeled before use and which are stored in tight barrels, boxes or crates.

.....
State Food and Drug Commissioner.

Approved, April 9, 1909.

.....President, State Board of Health,
.....State Health Commissioner.

CIRCULAR LETTER No. 4.

SUBJECT: UNPROTECTED FOOD STUFFS.

To the Wholesale and Retail Dealers in Food Products of Indiana:

Section 3 of Chapter 163, of the Acts of 1909, regulating the sanitary production and distribution of food, reads in part as follows:

"For the purpose of this act, unclean, unhealthful or unsanitary conditions shall be deemed to exist if food in the process of manufacture, preparation, packing, storing, sale, distribution or transportation is not securely protected from flies, dust, dirt, and, as far as may be necessary by all reasonable means, from all other foreign or injurious contamination."

In order that all dealers including grocers, bakers, confectioners, restaurant keepers, saloon keepers and other persons engaged in the sale of food stuffs may understand the application of this section of the law, the State Board of Health on April 9, 1909, issued the following order:

No prepared food stuffs, such as baker's goods, confectionery, shelled nuts, etc.; dried fruits such as dates, figs, peaches, prunes, apricots, etc.; cereal products such as tapioca, breakfast foods, noodles, etc.; pickled products, such as pickles, chili sauce, chow chow, etc.; fruit products such as apple butter, jellies, jams, etc.; meat products such as dried, salted or smoked fish, veal loaf, pickled pigs feet, mince meat, chipped beef, boiled ham; or other foods prepared for eating or subject to attack of worms or flies shall be displayed for sale unless protected from flies, dust, dirt, and all other foreign or injurious contamination by suitable coverings of glass, wood or metal.

This circular letter is supplementary to Rule 17, dated April 10, 1907.

.....
State Food and Drug Commissioner.

Approved, April 9, 1909.

.....President, State Board of Health,
.....State Health Commissioner.

CIRCULAR LETTER No. 5.

SUBJECT: SAUSAGE AND MEAT PRODUCTS.

To the Butchers and Meat Dealers of Indiana:

The State Board of Health has ordered that attention be called to the fact that the use of a "binder," "filler," or material composed of starch, potato flour, or cereal product in sausage, hamburger steak, canned meat or other meat products (except meat loaf), is in violation of that portion of the Pure Food and Drug Law included in Section 2, Chapter 104, Acts 1907.

Sausage and other meat products (except meat loaf) which contains such "binder," "filler," or any form of cereal product, cannot legally be sold unless the package is plainly marked in black Gothic letters at least one-fourth of an inch in height "Sausage with Cereal Added," "Potted Meat with Cereal Added," etc.

Attention is also called to the fact that under the same section of the Pure Food Law the addition to sausage of water in excess of the amount present in the meats from which it is prepared when in a fresh condition, is illegal.

The manufacture and sale of sausage and meat products herein referred to which contain either "filler," "binder," cereal products or added water will be contested on and after May 1, 1909.

.....
State Food and Drug Commissioner.

Approved, April 9, 1909.

.....President, State Board of Health,
.....State Health Commissioner.

Ordered: All bulletins issued by the department shall be submitted to the President and the Secretary before the same are printed and promulgated; and they shall order the same.

Ordered: The State Board of Health will hold a conference with the dairymen of the State some time in the fall. The Food Commissioner is directed to make arrangements and to get up a program.

Ordered: That Dr. Fred Prow, of Bloomington, be elected a member of the Indiana State Board of Dental Examiners to serve for two years from June 1, 1909. The Secretary was directed to inform Dr. Prow of his election and to request a reply.

Ordered: That the annual health officers' school shall be held May 20th and 21st, the President and Secretary to make arrangements and prepare a program.

Ordered: The President and Secretary shall constitute a committee to draw up a program for the examination of those desiring to be health officers as commanded in the statutes; said program to be submitted to the Board at an early meeting.

Ordered: Drs. Tucker and Hurty, if possible, should attend the meeting of the conference of state and municipal boards of health at Washington with the United States Public Health and Marine Hospital Service. The said meeting to be held June 2d, 3d, 4th and 5th, the Board to pay all expenses.

Ordered: That the President should, at his pleasure, attend and represent the State Board of Health at the annual meeting of the National Association for the Study and Prevention of Tuberculosis, to be held at Washington, May 12th, 13th and 14th, the Board to pay his expenses.

The following resolution, recommending the adoption of the following order, was introduced by Dr. Davis and seconded by Dr. McCoy:

APRIL 9, 1909.

Ordered: By the State Board of Health that all employees of the Indiana State Board of Health shall devote full legal time to the work of the State. No private chemical analyses or bacteriological or pathological examinations shall be made in the laboratories of the State Board of Health, nor private work be done in any of the offices of the State Board of Health.

Be it further ordered that a copy of this order attested by the President and Secretary shall be posted in all Departments and offices of the State Board of Health.

Adjourned.

REGULAR QUARTERLY MEETING, APRIL 9, 1909.

To consider and close up the affairs of the first calendar quarter ending March 31, 1909, and the second fiscal quarter ending March 31, 1909.

Called to order at 2 p. m. by President Tucker.

Present: Drs. Tucker, McCoy, Davis, Hurty.

Minutes of the regular meeting of January 8, 1909, and of the special meeting of February 11, 1908. read and approved specifically in each part and as a whole.

The Secretary's report for the quarter was read as follows:

REPORT OF SECRETARY FOR THE CALENDAR QUARTER ENDING MARCH 31, 1909.

The work of the first quarter has proceeded satisfactorily. The legislature being in session the first two months of the quarter, a

good deal of the time of the Secretary was taken from the usual duties of his office, the legislation which the Board recommended and had before the legislature requiring considerable attention.

It is my pleasure to officially report that out of our five bills four were secured. The first bill, which amends in various respects the old health law of 1891, was passed, and we now have a health law which is modern and excellent.

The health officers after January 1, 1910, will serve for a term of four years. Their salaries are fixed and their duties and powers plainly set forth. The new law also provides that health officers hereafter shall be informed in hygiene and sanitary science, and only those may be appointed by the local appointing powers who have passed an examination in hygiene and sanitary science before the State Board of Health and hold a certificate of eligibility from the said Board. This means that eventually all health officers will be competent, trained men. The law also contains a remarkable clause which should be recorded here. This clause provides that "It shall be unlawful for any person, firm or corporation to maintain any conditions which generate, promote or transmit disease."

The bill provided and recommended by the Board which was entitled "A Bill Governing the Sanitation of Food Producing Establishments," passed.

The bill which was termed "The Prevention of Pollution of Streams" bill also passed.

The fourth bill which passed was prepared by the State Veterinarian but recommended by the Board. It related to the tuberculin testing of milk cattle. Under this law it will be possible to eliminate the tuberculous cattle from the State. However, a greater appropriation will be required before it can be made thoroughly effective.

The fifth bill presented by the Board failed of passage. This bill was entitled "A Bill to Provide Sanitary Schoolhouses and to Provide for the Medical Inspection of School Children." Senator (Dr.) McCarty, of Clinton County, introduced this bill. It passed the Senate readily and was to third reading in the House. Just at that time Senator (Dr.) McCarty, a Democrat, voted with the Republicans upon a temperance measure. This aroused the anger of his colleagues in the House and they proceeded to get their revenge by killing the bill. There was no objection to the bill itself. Dr. Walcott, President of the Massachusetts Board of Health, upon reading this bill said: "If this becomes a law in Indiana that

State will lead the world in school sanitation." Continuing, he said: "This means that Indiana will begin at the beginning of things and will, of course, produce results such as no other State has yet produced." It is a matter of deep regret on the part of your Secretary that this bill did not become a law.

CONTAGIOUS DISEASES.

The following tables show the smallpox and typhoid status for the quarter:

SMALLPOX COMPARISON FOR FIRST QUARTER, 1909.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
January, 1908	240	0	32
January, 1909	148	0	24
February, 1908	122	1	38
February, 1909			
March, 1908	284	2	35
March, 1909			
Total, 1908			
Total, 1909			

TYPHOID FEVER COMPARISON FOR FIRST QUARTER, 1909.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
January, 1908	256	51	42
January, 1909	194	36	39
February, 1908	192	47	33
February, 1909			
March, 1908	245	40	45
March, 1909			
Total, 1908			
Total, 1909			

Scarlet fever in mild form has prevailed considerably during the quarter. No disastrous outbreaks or epidemics have occurred, and only four schools were closed on account of scarlet fever during the quarter so far as heard from. The mortality has been low, but doubtless many of the children suffering from mild attacks of scarlet fever have received blemishes which will remain with them.

Typhoid has hardly been heard from. Pneumonia has prevailed to the degree which is usual for the first three months of the year. It is now considered so much a matter of course during January, February and March that health officers do not think to report it.

Twenty visits were made by the Secretary during the quarter, as follows:

[7-22707]

January 3, Lafayette, to lecture before the Lafayette Tuberculosis Society upon the "Economics of Tuberculosis."

January 6, Greencastle, to lecture at the Methodist Episcopal Church on the subject of "Tuberculosis."

January 5, Lafayette, to give testimony in a suit brought against the trustees of the Soldiers' Home.

January 12, Union City, on account of lecture on "Tuberculosis."

January 7, Crawfordsville, on account of lecture on "Hygiene vs. Social Plagues."

January 19, Washington, on account of lecture on "Tuberculosis."

January 23, Burnettsville, on account of lecture on "Tuberculosis."

January 29, Shelbyville, on account of lecture on "Tuberculosis."

February 2, Noblesville, on account of lecture on "Tuberculosis."

February 5, Monticello, on account of lecture on "Tuberculosis."

February 9, Muncie, on account of lecture on "Future Water Supply of Indiana."

February 12, Worthington, on account of lecture on "Tuberculosis."

February 24, Chicago, to attend the third annual meeting of the National School Hygiene Association and to read a paper entitled "School Hygiene in Indiana."

March 13, Corydon, to deliver three lectures.

March 19, Wabash and Lagro. At Wabash to deliver a lecture upon tuberculosis, and Lagro to make a sanitary survey of the schoolhouse.

March 22, Richmond, to deliver a lecture upon the "Future Water Supply of Indiana."

March 25, Arlington, to make a sanitary survey of a schoolhouse.

March 29, Lawrenceburg, to deliver three lectures.

March 30, Aurora, to deliver three lectures.

DETAILED ACCOUNT OF VISITS.

January 3, Lafayette. This visit was upon invitation of the local tuberculosis society to deliver a lecture before a popular audience on the subject of the "Economics of Tuberculosis." A large

audience greeted me in the auditorium of the Y. M. C. A. The visit was, I believe, attended with good results, judging from the reception and resolution of thanks and commendation which was given.

January 6, Greencastle. This visit was upon invitation of the Rev. John Walker to lecture to his parishioners upon the subject of "Tuberculosis." The said lecture was illustrated with lantern slides and was well received.

January 5, Lafayette. This visit was for the purpose of giving testimony in the Tippecanoe Circuit Court in a suit brought by the keeper of the restaurant on the grounds of the Soldiers' Home against the trustees of said home. The state health officer at a former visit had condemned the restaurant on said Soldiers' Home grounds and had recommended to the trustees that the said restaurant be abolished. The trustees did as recommended, and suit for damages was brought. My testimony consisted in stating in detail the unsanitary character of the restaurant.

January 12, Union City. This visit was made to deliver my usual illustrated lecture upon tuberculosis. The said lecture was given under the auspices of the Medical Society of Randolph County and the Women's Civic Federation of Union City. A large audience gathered to hear the lecture, and good must have resulted, judging from the attention of the audience and the resolution of thanks which was given.

January 7, Crawfordsville. This visit was made on Sunday to deliver a lecture upon "Hygiene vs. the Sexual Plagues" at the Y. M. C. A. Sunday afternoon "Big Meeting." The opera house was filled and my reception was everything that could be asked for. I believe this visit was attended with good results.

January 19, Washington. This visit was in order to deliver my usual illustrated lecture upon "Tuberculosis." The visit was made under the auspices of the Daviess County Medical Society, before which in the afternoon I read a paper entitled "The Future Hygiene," the lecture in the evening being delivered before a popular audience. The usual vote of thanks was offered, and several letters since received, together with the vote of thanks given, lead me to think the visit was profitable. The tuberculosis exhibit was displayed for two days.

January 23, Burnettsville. In acceptance of an invitation of the Cass County Farmers' Institute I visited Burnettsville on this date to deliver my usual illustrated lecture upon "Tuberculosis."

A large audience which filled the Methodist Church heard the lecture. The usual vote of thanks was given.

January 29, Shelbyville. This visit was made in order to deliver my illustrated lecture upon "Tuberculosis" before the Shelbyville Farmers' Institute. It was a stormy night, but nevertheless the opera house was well filled with an appreciative audience. Judging from the reception of the lecture and the vote of thanks given I believe the visit was attended with good results. The tuberculosis exhibit was displayed.

February 2, Noblesville. This visit was made in order to deliver my illustrated lecture upon "Tuberculosis" under the auspices of the Hamilton County Medical Society. The state tuberculosis exhibit was displayed in the court room, and in the evening the lecture was delivered to a good audience. The usual vote of thanks was given.

February 5, Monticello. This visit was made to give my illustrated lecture upon "Tuberculosis" under the auspices of the County Teachers' Institute. The Board's tuberculosis exhibit was shown in the court room. In the evening the lecture was given in the high school auditorium of the said school building, and a large audience was present and a resolution of thanks was given.

February 9, Muncie. The visit to Muncie was made upon invitation of the Muncie Commercial Club to address the business men on "The Future Water Supply of Indiana." The lecture was illustrated by a map and statistics and description of the sanitary survey of White River made by Professor Sackett was duly presented, together with other arguments and certain speculations concerning the situation. The lecture was well received, and the Commercial Club passed a motion appointing a committee of ten to wait upon the legislature to support the "Anti-Pollution of Streams" bill. A resolution of thanks was also given.

February 12, Worthington. The visit to Worthington was made in order to deliver my illustrated lecture upon tuberculosis. The Board's tuberculosis exhibit was displayed in the Methodist Church, where in the evening the lecture was given to a large audience. A resolution of thanks was given.

February 24, Chicago. Having accepted an invitation to read a paper upon the subject of "School Hygiene in Indiana" before the third annual meeting of the National School Hygiene Association, I went to Chicago upon this date to fulfill said promise. The said hygiene association met in the Great Northern Hotel with an

audience of over one hundred. The session was continued for three days, but I was present only one day. My paper was well received, and the association was particularly interested in the bill of the State Board of Health then pending before the State legislature concerning "school hygiene and medical inspection of school children." The bill was read in full upon request of the association, and was thoroughly approved in every respect. President Henry P. Walcott, who is also the well known president of the Massachusetts State Board of Health, in discussing the bill said: "If this bill becomes a law in Indiana it will place Indiana at the head of the world in the matter of school hygiene." As already stated in this report, the bill did not pass, and consequently Indiana has not taken the high position spoken of by President Walcott.

March 13, Corydon. Upon invitation of the Rev. G. W. LaRue, I visited Corydon to deliver two lay sermons and one afternoon lecture. All of the talks were given in the Methodist Church in Corydon to three audiences which completely filled the building. The title of the morning lecture was "The Hygienic Life." The afternoon lecture, exclusively before men, was entitled "Hygiene vs. the Sexual Plagues." In the evening I told at length of the work of the State Board of Health. On account of the attention given, the congratulations and remarks of individuals in the audience after each lecture, I conclude that good work was done for the public health cause.

March 19, Wabash. The object of this visit was to deliver my illustrated lecture upon "Tuberculosis" under the auspices of the Wabash County Medical Society and the Wabash Teachers' Association. The Board's tuberculosis exhibit was displayed for two days. A large audience heard the lecture in the Methodist Church. It was calculated that one thousand were present, the auditorium having a capacity of about fifteen hundred. Although no resolutions were passed, the congratulations given at the reception given me afterward lead me to think a good effect was produced.

March 22, Richmond. This visit was made on account of an invitation from the Richmond Commercial Club to lecture upon "The Future Water Supply of Indiana." I repeated the lecture given at Muncie upon the same subject, and was well and kindly received. A special committee escorted me to dinner and to the lecture. A resolution of thanks passed by the club and the commendations lead me to believe that a good effect was produced.

March 25, Arlington. The object of this visit was to inspect the schoolhouse. A petition signed by many citizens had been re-

ceived, setting forth that the schoolhouse was unsanitary and unsafe and requesting an examination by the State Board of Health. A complete sanitary survey was made, and a report of same will be presented at this meeting for the consideration of the Board.

March 29, Lawrenceburg. Upon invitation of the Dearborn County Medical Society and the Lawrenceburg Teachers' Association I visited Lawrenceburg upon this date. In the forenoon I talked to the high school students upon the subject of "School Hygiene" and the work of the State Board of Health. In the afternoon I talked to the teachers upon the subject of "School Hygiene." In the evening, under the auspices of the Commercial Club, I delivered my popular lecture on "Tuberculosis," to a large audience. I was kindly and well received, and feel particularly gratified that the business men of Lawrenceburg have taken up the subject of personal hygiene.

March 30, Aurora. I visited Aurora on this date because of an invitation of the Women's Research Club and the local teachers association. I repeated the program at Aurora, which was given at Lawrenceburg. The same was most agreeably received by the three separate audiences, and I believe that a good effect was produced.

SPECIAL MEETING INDIANA STATE BOARD OF HEALTH, MAY 20, 1909.

Called to order at 12 m. by the President.

Present: Drs. McCoy, Davis, Tucker, Hurty.

The President announced the object of the meeting was to attend the Annual Health Officers' School, to audit and allow accumulated bills, to consider the sanitary inspections of several schoolhouses and to attend to such other business as might come up.

The Secretary reported the attendance at the Health Officers' School to be 308, every county and nearly every county-seat being represented. He also reported that Drs. Ravenel and Reed were present and would appear upon the program at the afternoon session.

The Board examined and approved the program as follows:

PROGRAM INDIANA HEALTH OFFICERS' SCHOOL.

By Order and Under the Auspices of the Indiana State Board of Health, at
Indianapolis, May 20 and 21, 1909.

All sessions will be held at Claypool Hotel Auditorium.

Attention: Don't fail to register with the Clerk at the door.

Certificates of attendance, which are necessary to obtain payment of expenses, will be issued only to those who register, and the said certificates will be ready for delivery by the Clerk at the door after 4:00 p. m. Friday, May 21, 1909.

If you speak before the Convention, be sure to give your name and town, so that the audience and the stenographer may know who you are.

Don't have an "important case" or "pressing business" to call you away. Stay out the Conference and secure its benefits.

Discussion will follow each paper or lecture. Don't hesitate to give your ideas.

SESSIONS.

Thursday, May 20th.—First session, 10:00 a. m.; second session, 2:00 p. m.; third session, 8:00 p. m.

PROGRAM.

Friday, May 21st.—First session, 9:00 a. m.; second session, 2:00 p. m.

First Session, Thursday, 10:00 a. m.

Called to Order.

Address of Welcome, Governor Marshall.

Response, Doctor Bruggeman.

Address, Geo. T. MacCoy, President State Board of Health.

Address School Sanitation
Robert J. Aley, State Superintendent Public Instruction.

Paper What Can Health Officers do to better School Hygiene
J. E. King, Health Commissioner Wayne County.

Discussion.

Paper Medical Arithmetic
S. E. Earp, Indianapolis.

Discussion.

Second Session, 2:00 p. m.

Paper Sources and Modes of Inspection in Tuberculosis
Mazyck P. Ravenel, Professor Bacteriology and Pathology. University of Wisconsin.

Discussion.

Paper What a Health Officer Should Know
Severance Burrage, Professor Hygiene, Purdue University.

Discussion.

PaperThe Management of Infectious Diseases in Counties
G. C. Markle, Health Commissioner Randolph County.

Discussion.

Address....The Sanitary Condition of the Southern End of Lake Michigan
Illustrated.

H. E. Barnard, State Food and Drug Commissioner.

Discussion.

Third Session, 8:00 p. m.

Address.....The Prevention and Modern Treatment of Tuberculosis
Illustrated.

Mazyck P. Ravenel, Wisconsin University.

Address....A National Department of Public Health and its Relation to
Some Sanitary Problems in Indiana.

Charles A. L. Reed, Cincinnati, Ohio.

Invitation.—The Indianapolis Medical Society extends a cordial invitation to all health officers and visiting physicians to attend a Reception and Smoker in honor of Drs. Ravenel and Reed, after the lectures Thursday Evening; the same to be held in the Auditorium of the Hotel Claypool.

Fourth Session, Friday, 9:00 a. m.

Paper.....Prophylaxis of the Sexual Plagues
A. S. Jaeger, Indianapolis.

Discussion.

Paper.....Bacilli Carriers in their Relation to the Public Health
J. P. Simonds, Superintendent State Laboratory of Hygiene.

Discussion.

Address.....Anti-Tuberculosis Work in Indianapolis
W. T. S. Dodds.

Paper.....Ventilation in Rural Districts
Geo. B. Lake, Walcottville.

Discussion.

Fifth Session, Friday, 2:00 p. m.

Paper.....The Prevention of Ophthalmia Neonatorum
Walter N. Sharp, Indianapolis.

Paper.....The Diagnosis and Treatment of Cerebro-Spinal Meningitis
W. T. Hoskins.

Discussion.

The New Law, the Rules, Examinations.

J. N. Hurty, State Health Commissioner.

The hour for the second session, 8 p. m., of the Health Officers' School, having arrived, the Board adjourned to the following day at 12 m,

ADJOURNED MEETING.

Called to order at 12 m., May 21st, by the President.

Present: Drs. McCoy, Tucker, Hurty.

The Secretary announced that the sanitary surveys and recommendations concerning a number of schoolhouses were ready for consideration and action. The President directed they be presented.

THE SCHOOLHOUSE AT ORLEANS.

This schoolhouse was condemned three years ago, but condemnation suspended upon condition that certain temporary improvements be made and because the school authorities made it plain that money could not be raised to erect a new building.

Mr. Edward Heise, President of the School Board, called at this office on May 6th and said he represented the school board, when it was declared that the said board greatly desired to erect a new schoolhouse. He made a financial showing which makes plain the fact that a schoolhouse of the proper size, and proper sanitary construction, cannot be erected for less than thirty thousand dollars. At the utmost stretch, it was possible for the town of Orleans, coupled with the township, to raise only eighteen thousand dollars. The old situation, therefore, still remains and it is a practical impossibility to this year put up a new building.

The temporary improvements made two years ago, still remain, and it is recommended that the condemnation be extended another year, when it is quite certain it will be possible to raise funds for a new building.

After consideration, it was ordered that the time of condemnation of the Orleans schoolhouse be extended to June 1, 1910.

Sanitary survey of schoolhouse at Ellettsville, Richland Township, Monroe County, Indiana, May 12, 1909, by J. N. Hurty:

Site: The site is about one-half acre, located almost in the midst of the town. It is well drained, and not sufficiently large to supply the proper amount of playground.

Building: The building is brick, stone foundation, no basement. Two stories and four rooms. Walls are good, no cracks discoverable. Built in 1872. All rooms heated by stoves. Blackboards painted on walls. Some of them dull black and some of them glossy.

High School: The high school room is upstairs. It is 21x36x16 feet. Is lighted from three sides, by six windows. No ventilating ducts. Floors are bad. The shades at the windows are much worn. Fifty desks and all of them in good repair.

Room for Grades 7-8: This is in second story. It is 21x36x16 feet, with fifty seats. Lighted from three sides, by seven windows. Floors in passable condition, desks passable. No ventilating ducts. Shades are worn.

Room for Grades 5-6: Same as high school and immediately beneath. It contains sixty-one seats in good condition. The floor is bad. Heated by a stove, no ventilating ducts. Light sufficient, but wrongly introduced. Room beneath grades 7-8. This is exactly the same size as the room above, known as Room 7-8. Heated in the same way. Floor in passable condition. Seventy-two seats, all of them passable.

Primary Building: The primary building is a separate frame building on the same lot with the large brick building just described. It has one room, is twenty-four feet wide and twenty-nine feet long. Lighted from two sides by six windows, three on each side. Has slate blackboards, fifty-three seats, no ventilating ducts. Heated by a stove.

Outhouses: The outhouses are ordinary privies. No water supply. Drinking water is carried about a quarter of a mile.

Summary: The sanitary conditions of both of these buildings are bad. They are not heated, ventilated nor lighted properly and sufficiently. The school lot is too small and is badly situated, as it is in a thickly settled part of the town.

Recommendations: I recommend that this building be condemned.

After the consideration of the sanitary survey of the Ellettsville schoolhouse the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Ellettsville, Richland Township, Monroe County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Ellettsville, Richland Township, Monroe County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1909; and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, May 21, 1909.

PETITION.

April 21, 1909.

To the Indiana State Board of Health:

We, the undersigned, respectfully petition your Honorable Board to make inspection of the schoolhouse at Clarksburg, known as District No.

2, Fugit Township, Decatur County. The name and address of the trustee is, Theo. W. Senlour, Clarksburg, Indiana.

George L. Dobyns, Merchant.
 J. L. Burris, Merchant.
 W. E. Thomas, M. D.
 A. C. Shumm, Druggist.
 Geo. F. Rodgers, Barber.
 John L. Tarplee, Merchant.
 B. E. Russell,
 W. J. Gemmill, Banker.
 W. W. Grose, Blacksmith.
 J. E. Brodie, Blacksmith.
 And others.

Sanitary survey of schoolhouse at Clarksburg, Decatur County, Fugit Township, Ind., May 10, 1909, by D. W. Weaver, M. D., County Health Commissioner:

The Clarksburg School, Fugit Township, is situated upon a lot approximately 100 feet by 200 feet, level, sodded, and of a good natural drainage. The lot is an ideal one. The schoolhouse is towards the north end and faces east. The building is of brick, two stories high and has a slate roof. The roof leaks in several places. The wall upon the south end is cracked from the roof to the ground and the crack at the roof and extending to the window is so large that one can feel the wind blowing through. The cellar windows or transoms are lower than the surrounding ground, allowing the water from the down spouts and the rain upon the ground to flow into the cellar. The cellar is damp and muddy as a result. The cellar extends under the whole of the house.

Room No. 1, ground floor, north room is 27x28x13 feet, desks facing southward; slate upon the south and east wall, good condition; five windows 8½x30 inches glass space, located as per diagram; desks are old, eleven single and twenty double ones; stove, a cannon gas stove, to the rear of the room, protected by sheet shields; ceiling painted dark brown and side walls a lighter brown. There is nothing good in this room except the slate blackboards. The floor is worn out, light miserable.

Room No. 2 south, facing northward. Similar to No. 1 in size and shape and light. The floor is worn out; the ceiling painted a yellow-brown and walls a dark green; stove similar to No. 1, except it has a shield around the back as well as the sides; nothing good except the slate.

No. 3, upper room, north side, facing east. The floor is full of holes, the ceiling loose and apparently ready to drop at the center. Ceiling papered, of a dirty brown, old; walls painted dark brown. Desks disreputable—in fact this room has nothing except the slate that is worth anything. The stove is the same.

Room 4, south, upper room. Floor fair, ceiling cracked and dirty the side wall painted drab color. Crack in the wall shows through upon the inside from ceiling to the floor.

The hall or stairway is 13x27 feet inside measurement. It faces east, has two doors to the east and one upon the north side, one window upon

the north. The stairway leads upwards, from the southwest corner, to a landing, then east to the second landing, then north to the second floor. The stairway is four feet wide but worn, dark and a regular firetrap.

This is all the more unsatisfactory since they built a partition in the upper hall, making out of the north end of it a small room for a recitation room.

There are one hundred and forty-five pupils at this school and considering the miserable light, the wornout floors, the cracked walls, the wornout desks, the poor heating arrangement, the firetrap stairway, the damp cellar, the time of the building (built 1878) there is but one recommendation to make, a new building upon the same lot. The outhouses are fair. The well is good, drilled and well protected. I recommend a new schoolhouse.

After consideration of the above sanitary survey of the Clarksburg schoolhouse, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Clarksburg, Fugit Township, Decatur County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Clarksburg, Fugit Township, Decatur County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, May 21, 1909.

PETITION.

April 9, 1909.

To the Indiana State Board of Health:

We, the undersigned respectfully petition your Honorable Board to make inspection of the schoolhouse at Riley, known as District No. 5, Riley Township, Vigo County. The name and address of the trustee is, J. L. Graham, Riley, Ind.

A. D. Mullenix, Farmer.
 Sarah E. Brill, Widow.
 Elmer E. Brill, Rural mail carrier.
 Ezra H. Fagg, Farmer.
 Warrie Forster, Farmer.
 Wm. Donham, Plasterer.
 Henry Haas, General store.
 C. J. Aspreger, General store.
 A. M. Fisk, Coal dealer.
 W. C. Fox, Undertaker.
 And others.

Sanitary inspection of schoolhouse, District No. 5, Riley Township, Vigo County, Ind., May 5, 1909, by F. W. Shaley, County Health Commissioner:

I repaired to Riley, Vigo County, Indiana, to inspect the schoolhouse known as District No. 5, Riley Township, Vigo County, Ind., and have the following to report. In order that you might have a better chance to get the "lay of the land" I took some views and submit them with the report.

Schoolhouse District No. 5, Riley Township, is situated in the village of Riley, Ind., upon a lot about two hundred and twenty-two feet long and one hundred and thirty feet wide. The soil is clay but most of the lot has been covered with cinders. A brick walk extends from the entrance to the lot to the entrance of the building. The building is constructed of brick with stone trimmings and is three stories high, without cellar or basement. Foundation is brick. In front and on east side of building, there are a number of shade trees. The main and only entrance to building faces south and is constructed of double doors, which swing inward into a hall. The hall gives entrance to rooms Nos. 1 and 2, the doors of which also swing inward. The stairway, forty-seven inches wide, leads up seven steps to a landing, makes a turn of ninety degrees with five steps to another landing, another turn of ninety degrees, with eight steps to hall of second floor. From this hall there is an entrance by a single door, which swings outward, to a small hall, seven feet wide and four feet deep, into which two doors open, giving entrance to rooms Nos. 3 and 4 on second floor. At the west end of the hall of the second floor is another door leading to a narrow enclosed stairway to the third floor. This third floor of the building is the property of a Masonic Lodge and in use for Lodge purposes. The lodge hall proper extends over the two schoolrooms Nos. 3 and 4, which in their turn are directly over rooms Nos. 1 and 2.

No fire escape of any kind is present. The exit from third floor is positively dangerous. The exit from rooms 3 and 4 on second floor is dangerous and the exit from rooms 1 and 2 on first floor is dangerous, because the doors swing in and the windows have strong wire netting to protect the glass.

The outhouses are two in number and are very poor contrivances. No. 1 outhouse is filled level with the ground, filthy and unsanitary. No. 2 outhouse is very little if any better. The source of drinking water is a well a little to the front and right of the building, about 12 to 15 feet deep, I am told, in quicksand and is drawn by an old wooden pump which is open at the top. A loose board platform covers the well. The building is surmounted by a cupola in which is hung a bell that is very heavy (between one and two tons), and I am told that it is so loose that a person can rock it, or that it rocks in the masonry, from the top of the building to the bottom, from one or two inches in extent, which shows that the east wall has settled considerably and is liable to fall at any time. The floor in the lodge room shows considerable bulging in the centre, which is another evidence of danger.

Room No. 1, is in fairly good condition. The seating should be changed in order that the light would fall from the left instead of hitting the pupils' backs. This is also true of Room No. 2. At the back end of all the rooms there is a small room intended for a cloakroom, the walls of which have

never been papered and are a sight to behold—pencil marks, etc., etc.—with very poor accommodation for clothing. The walls of the four schoolrooms are papered and if cleaned would be in good condition. The halls need repapering. The floors have been oiled at one time. The desks are good and of regulation kind. Each room is heated by a stove surmounted by a drum. Each room is 24 feet east and west by 27 feet north and south, with 12 foot ceiling.

The health of the pupils is about normal. No lessons at the present time, nor will there be until fall. The sanitary condition of the school, with the exceptions I have named, is about on a par with all country schools. The aim of the patrons of the school, as I learn it, was to have the school examined with reference to its safety. The building was erected in 1875, on ground belonging to the township, by the trustee of the township and a lodge of Masons conjointly, and the difficulty now presents itself, as to how the partnership is to be equitably dissolved in case the building is condemned. You can judge what the officers of the lodge think of the security of the building, when I inform you they have refused to allow any public meetings, such as public installations or banquets, etc., to be held in their hall.

My recommendation is that this affair be turned over to the proper inspector of public buildings, be he factory inspector or whoever he is, and that a competent architect be sent at once to do the inspecting in order that the trustee, Mr. Graham, can get ready for the school next winter. I wish to state in connection with this report, that Mr. Graham was very courteous and aided me in every way. He also expressed an earnest desire to know what to do in the case. The condition of the school is not so much an unsanitary one, as it is a dangerous one.

In regard to Schoolhouse No. 5, Riley Township, Vigo County, I recommend

1st. That said schoolhouse be torn down and another built in its place. This building to be two stories in height, with basement, and that each floor be divided into four rooms. I also recommend that in the plans and specifications of this new building (to be) everything be considered that should be, in constructing a modern and up-to-date schoolhouse, with reference to health and convenience of the pupils. The heating of this building to be by steam or hot water, from a plant separate and distinct from said building.

2d. In the event that Recommendation No. 1 be not feasible, I would then recommend that the third floor of the present building be removed and the east wall be secured by iron rods, to the rest of the building; that proper ventilating shafts be placed in each room and that the seating of the pupils be changed so that the light shall fall upon their desks from the left side; that all doors be made to swing outward, and that entrance to rooms 3 and 4 be separate and not through the small hall. I would also recommend that all walls be papered, including cloakrooms and halls, and last, but not least by any means, I would recommend that two decent out-houses be provided and that they be kept decent.

After consideration of the above sanitary survey the following proclamation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse known as District No. 5, Riley Township, Vigo County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse known as District No. 5, Riley Township, Vigo County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, May 21, 1909.

PETITION.

April 28, 1909.

To the Indiana State Board of Health:

We, the undersigned respectfully petition your Honorable Board to make inspection of the schoolhouse at Rome City, known as District No. 4, Orange Township, Noble County. The name and address of the trustee is Wm. H. Hassinger, Rome City, Ind.

W. A. Williams, Druggist.
 Elmer A. Rife, Grocer.
 L. S. Jennings, Grocer.
 Wm. G. Nowels, Farmer.
 J. A. Jennings, Sanitary Officer.
 Edw. F. Cobbs, Merchant.
 R. J. Mack, Farmer.
 J. H. Ziglear, Contractor.
 M. E. Bloom, Barber.
 E. C. Moore, Farmer.
 And others.

Sanitary survey of schoolhouse at Rome City, Noble County, Indiana, May 16, 1909, by W. T. Green, M. D., Health Commissioner Noble County:

The Orange Township High School: District No. 4, Orange Township, Noble County, Ind. Township Trustee of said school township is Mr. Wm. Hessinger, Rome City, Ind.

Location.—The school grounds have an area of about two acres with good natural drainage, practically in all directions, with a small grove over a part of the property. There is plenty of playground, a good sandy top soil, with gravel about four feet beneath the surface.

Building.—It is a frame building, in fair condition, 60 x 36 feet, that is the main part of the building. There is also a wing at the front of the building that measures twenty-four feet, ten inches by thirty-six feet. The whole structure is twenty-six feet from wall to eaves. The building is

supported by a stone foundation three feet high, in good condition with sufficient ventilation under the floor. It has no basement. The building is in need of paint. It has an ordinary shingle roof with a large belfry over the front part. The building is two stories high. There are seven rooms besides a cloakroom. The hall on the first floor runs the entire length of the building. On the second floor the hall runs the entire length of the main part of the building.

High School Room.—It is on the first floor and occupies the southeast corner of the building. This room is thirty-six feet seven inches long by twenty-four feet wide. There are seven windows, each one being 8 x 3 feet. Glass surface one hundred and sixty-eight square feet. The room is thirteen feet high. All the rooms are the same height. The floor is poor. The hall is good. There are forty desks. There is ventilation into a vent shaft that is poor.

Primary Room.—It is 36 feet 7 inches x 24 x 13 feet. The floor is poor. Contains grades 1 and 2. It has six windows, 8 x 3 feet—that is one hundred and forty-four square feet of glass surface. Has ventilation, as the high school. There are forty-six desks in this room. This room occupies the southwest corner of the building.

Recitation Room.—It is on the first floor and occupies the northeast corner of the building. It is 24 ft. 10 in. x 12 x 13 feet. There are three windows each 8 x 3 feet, or seventy-two square feet of glass surface. There are ten seats. Floor is in good condition. Two of the windows have weights, and one has none.

Cloak and Laboratory Room.—There is a partition which separates the two rooms. The cloakroom is 12 x 12 x 13 feet. It has one window 8 x 3 feet, or twenty-four feet of glass surface. **Laboratory Room.**—It has two windows, 8 x 3 feet, or forty-eight feet of glass surface. The floors in these two rooms are good.

Second Floor.—The seventh and eighth grades occupy the front room of this floor. This room is 24 ft. 10 in. x 36 x 13 feet. There are six windows, each 8 x 3 feet, having a glass surface of one hundred and forty-four square feet. There are thirty-six desks. The floor is in good condition. The walls of this room are papered and in bad condition. This room opens into a cloakroom and hall combined, 12 x 32 feet.

The Fifth and Sixth Grade Room.—It occupies the southeast corner of the second floor. It is 32 ft. 7 in. x 24 x 13 feet. There are six windows 8 x 3 feet, or one hundred and forty-four square feet of glass surface. There are thirty-five desks. These seats are not good and the floor is bad. The walls are papered and covered with alabastine. There are two doors, one entering into the cloakroom and one into the hall.

Third and Fourth Grades.—This room occupies the southwest corner of the second floor. It is 32 ft. 7 in. x 24 x 13 feet. There are thirty desks, all old. The floor is bad. Walls are covered with old paper and alabastine. There are two doors. They open as those mentioned above.

The windows have adjustable green shades.

Heating.—Each room has a Round Oak stove. The rooms are all ventilated by vents opening into shaft by openings a foot square.

Outhouses.—Girls' closet: This is located seventy-five feet south of the southeast corner of the building. It is 16 x 16 feet. There are eight

stools, all in good condition. This building is not sufficiently underpinned. Boys' Closet: This is one hundred and seventy-five feet southwest of the main building. It is 16 x 16 feet. There are eight stools in good condition. The underpinning is not good. Both of these vaults are six feet deep with plank curbing.

Fuel Shed.—It is fifty feet east of the main building and is 20 x 40 feet in size. All the outbuildings are wooden structures.

Water.—The supply of water comes from a driven well, twenty-four feet deep with good drain. It also has a good platform. It is located sixteen feet in front of the main building.

Walks.—These are good gravel walks leading to the front entrance of the building and to the closets.

SUMMARY AND RECOMMENDATIONS.

Location is excellent. The building should be repainted on the outside. A new heating apparatus should be installed. There should be proper ventilation. The heating and ventilation are both far from hygienic at the present time. The windows in the main part of the building which are without weights at present should have weights. These are now held with stops. All of the rooms are papered and alabastined over. This is not sanitary. They are a constant menace to the health of the pupils. This paper should be removed and the walls painted and if necessary, replastered. The floors spoken of as bad, are bad. The boards are shrunk and they leave great cracks which are filled with dust and dirt. This is not sanitary. These floors should be repaired or if necessary, rebuilt. The desks spoken of as being in bad condition, are minus the inkwells and are badly scratched and cut. Some need revarnishing and some should be replaced by new ones. The doors all open outward as provided by law. The boys' and the girls' closets should have screens before the entrances and should be properly underpinned.

All windows have adjustable shades.

After consideration of the sanitary survey of the Rome City schoolhouse it was

Ordered that said schoolhouse was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Rome City, Noble County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Rome City, Noble County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1st, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, May 21, 1909.

PETITION.

April 28, 1909.

We, the undersigned patrons of District No. 7, of Clay Township, Decatur County, Ind., respectfully petition the State Board of Health to inspect the school building at said district, Burney, Ind., and determine whether said building is safe and sanitary.

W. F. McCULLOUGH.
W. A. MINER.
FRANK ALEXANDER.
WILLARD A. MIERS.
JOHN G. GARTIN.
MORGAN L. MIERS.
OTTO DIETRICK.
ZENO PADGETT.
WM. B. MINOR.
DR. E. A. PORTER.
C. C. MORRISON. M. D.
JOHN T. PAVY.

Sanitary survey of schoolhouse at Burney, Clay Township, Decatur County, Ind., May 7, 1909, by D. W. Weaver, County Health Commissioner:

The Burney School, Clay Township, No. 7, is located upon a lot approximately 160 x 100 feet. It is a flat lot sloping towards the back, the north. The front part of the yard is covered with ashes and cinders while the back part is clayey and very likely to become muddy during rainy weather. The outhouses are situated to the back part of the lot, approximately one hundred feet and fifty feet respectively, from the schoolhouse. There are no walks leading to them.

The school building is of brick, two stories high. It was built in 1891. The main building is 33 x 63 feet, with a hall 15 x 27 feet in front, facing towards the south. It has a shingle roof that is beyond repair. I was in the attic and found the light streaming through the roof at numerous places, the rafters or girders are sprung allowing the roof to settle in the center. The walls seem to me, perfectly safe and sound, except for a crack in it at the west end beneath the lower window. I could see no flaw. This crack, I believe was due to the settling of the foundation when it was built.

A few bricks were pulled from the wall at the west side of the hall, which show that the wall around the windows is only two bricks thick, but at the corners and all the rest of the wall, except surrounding the windows, is three if not four bricks thick. The down spouts from the roof are torn away, allowing the water from the roof to wash down along the wall and soak in through the wall as the paper shows water stain at several places.

Hall.—It is 15 x 27 feet, has two exit doors as per diagram. The stairway from above is in the center, forty inches wide, leading to a landing from which extend two (one upon each side) stairway to the ground floor, immediately in front of the exit doors. The bannister is broken beyond repair. The dimensions of the hall and stairway seem to me of an ideal proportion and arrangement. The hall is papered and clean, except the floor, which is worn out. The outside doors swing inward.

Room No. 1, west, ground floor room, is not lighted sufficiently. There are but four windows, each $32\frac{1}{2}$ in. x $6\frac{1}{2}$ feet glass space. The floor is dirty, oily, but tight. Desks are in good condition. Walls are papered with a dark striped paper. Ceiling with a light yellowish paper, good and clean condition. Wainscoting three feet high surrounds the room. Slate is in extra good condition. The stove is a large cannon stove with zinc shields to each side to protect children.

Room No. 2, east ground floor room, is of the same size as No. 1, $11\frac{1}{2}$ x 28 x 29 feet. The desks in No. 2 face west. The stove, slate and floor are similar to No. 1. Walls are papered with a clean, light-blue figured paper. Ceiling clean light colored paper.

Room No. 3, upper west room is 14 x 28 x 29 feet. Ceiling is papered with a clean, light-blue blocked paper. Side walls with a deep blue figured paper. Water soaked in northeast corner. Windows are $32\frac{1}{2}$ in. x 7 $\frac{1}{2}$ feet glass space. Floor is fair. Desks good. Slate, extra, stove a cannon coal stove with shields.

Room No. 4, east upper room, high school, is of the same size as the No. 3. Ceiling of a light blocked paper; side walls are papered with a light drab paper. Desks are adjustable, new. Floor good, but dirty. Stove, cannon coal, with shields. The desks in the No. 3 and No. 4 rooms face each other and have a folding door between them. The outhouses are in a wretched condition. The well is drilled, located nicely and drained with a surface drain spout.

Recommendations.—I recommend a new roof (completely); new down spouts to carry the water away from the roof; more windows upon the north side, two or four to each floor; a new floor in the hall; scrub the floor throughout with concentrated lye; a new bannister to the stairway; two new privy-vaults and outhouses; with board walks to them; possibly change the desks in the east rooms to face southward. While I am not a capable judge of the life of the brick wall, I consider it safe. I would suggest that the trustee send a capable architect to see whether the wall will justify these improvements. I was very much impressed with the dimensions of rooms and hall, while it is true that No. 1 has not the required air space for the total enrollment, but this is never reached in one day.

After consideration of the above sanitary survey, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Burney, Clay Township, Decatur County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Burney, Clay Township, Decatur County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1st, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, May 21, 1909.

Sanitary survey of schoolhouse at Markle, Huntington County, Ind., May 14, 1909, by A. H. Northrup, M. D., Health Officer:

Grounds.—This was a low, wet, mucky place, but has been filled in and well drained, with the exception that the sewer, into which all drains at the southwest corner of the lot, is not large enough to carry off the surface water at the time of heavy rains, as the street on the west side of grounds runs up the hill, and the water rushes down faster than the sewer can carry it off and sometimes will flood the street corner and sidewalk for a few hours, and this backs up in the drainage from school grounds and sometimes causes three feet of water in the basement and puts out the furnace fire. This water reaches the basement through two iron pipes placed there for drainage and as soon as the water drains from the street the basement drains. These pipes have plugs to close them, but they are usually taken out for fear the force of the water will "heave" the cement floor. This seems unnecessary as there is twelve to fifteen inches of cement over the floor, and a three foot water force would not be liable to break it. The grounds upon which the buildings stand are 190 x 160 feet. It is located upon a corner and reaches to the alley on the east. To the north of the main ground and extending along the alley is a play ground 78 x 108 feet. There are eleven good shade trees to the west and south of the building. The walks are of brick and cement and the grounds are well kept.

Building.—The old part of the building was erected in 1885. The new part (rooms 1 and 6) was added in 1895. The foundation is so low that the floors of rooms 1 and 3 are not high enough from ground to allow a man to crawl under them except along the steam pipes where it has been dug away. There are no openings or air spaces in these walls and rooms 1 and 3 are quite damp in fall when no heat in them. All floors are of single wood flooring.

Halls.—These, are too small to allow proper exit in case of fire. The doors from rooms 1 and 6 open into the room instead of out. The front doorway is six feet wide. All doors are eight feet high except cloakrooms. Library and office which are 2 ft. 8 in. x 6 ft. 8 inches. There are no cloakrooms except from rooms 1 and 6. The walls of hall near rooms 4 and 5 are used for this purpose. The stairway is three and one-half feet wide.

Basement.—This is located under room 2, and the east wing of the hall. It is 40 x 8 x 6 feet. The floor and walls are cement. Has three small windows. No entrance except the inside stairway which is directly under the other stairs. The furnace is at the side of the stairs and under the east wing of hall. The smoke pipe from furnace to the chimney is about

twelve to fourteen inches from pine joist of floor above. Soft coal is used and soot collects in this pipe, often catches fire, and causes the pipe to become red hot.

Heating Plant.—The building is steam-heated by direct radiation. The one pipe system is used and this pipe to each radiator is only a one inch pipe and does not allow proper return of condensed water to the boiler. Once last winter when the soot burned out and the janitor was absent, it heated up so much that all the water evaporated from the boiler and condensed in the radiators, then as the pressure went down, it drew the water back from the radiators and coming into the overheated dry boiler, it cracked it on all sides, and had to dismiss school until a new boiler was procured and installed. But they have not enlarged pipes yet and will probably occur again. Of course, this system does not give proper heat to the rooms. There are three radiators each in rooms 1 and 6, two each in rooms 2, 3, 4, and 5 and one each in upper and lower halls, office and library. The rooms are ventilated by windows. There has been a piece of tin fastened to the top of some of the window cases, with the edge turned upward, then the window is lowered from top and this is supposed to direct the air upward. I cannot see much in it. There is no other ventilation, consequently, enlarged tonsils and colds are very prevalent. I know somewhat of this from trying to keep some of my little patients in school each winter. It is always, "Teacher opened the window on me." To make matters worse they have a rule to march them out each recess without wraps, hats or overshoes, and they have to stay out or take their seats. I have passed there stormy days and have seen a tonsillitis case of the day before out without cap or wraps. The rooms are not all the same temperature, and changing from one to another makes it bad. The blackboards are all of slate except in library and office, which are of composition. The desks are the kind with seat and head attached to the desk behind. They are all single, one pupil to a desk. The floors are in fairly good condition and oiled.

Water.—This is from a drilled well sixty feet deep in the rock, iron cased except the top five feet which is tile. The tile was put in so as to pump water to the furnace boiler. I cannot see why this is necessary. The children tell me they sometimes pump sand and dirt in the water and it is sometimes muddy. This must be due to the casing or the boiler arrangement. They have tin cups and pump water as they use it, drinking directly from the well. There is a drain to the sewer for the pump.

Outhouses.—There are two of these, one for each sex. Both of brick and located on the alley. Boys' 9 x 18½ feet, two rooms, one with tin urinal trough draining into ground. Drains are used for fecal deposits, tin lined but leaky and although school has been out for a week or more, the odor was far reaching and distinct. The janitor told me they were usually emptied in the fall. They surely were not emptied this spring. There is no lime, earth or other material used, and the closets were filthy and the odor in them awful. The girls' building is 10 x 12½ feet, one room and about the same sanitary condition as the boys', only not so filthy floors. There is a light seven-foot board fence running from the north corner of each wing of building separating the closets and the girls use the door at the east end of the hall and the boys the front door. There is a wood

building with shingle roof, 15 x 24 feet located on the alley near boys' closet. This was used for fuel but is now used as store-room. I recommend condemnation.

After consideration of the sanitary survey of the schoolhouse at Markle, the following proclamation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Markle, Huntington County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Markle, Huntington County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, May 21, 1909.

Sanitary survey of schoolhouse at Gwynneville, Hanover Township, Shelby County, May 15, 1909, by J. N. Hurty.

Site.—The site of the present schoolhouse is below the level of the roads on all three sides. It is about one-half square in extent, say 200 by 300 feet. The ground is everywhere low and in the rear of the house is quite wet. As the roads surrounding it are higher than the ground, it becomes a pool in wet weather. At the time the survey was made, the rain was descending in sheets, and pools of water stood all over the grounds. A cursory view shows that the said grounds cannot be easily drained. A board walk leads from the street to the entrance of the schoolhouse.

Building.—Is a one-story, three-room brick, stone foundation, no basement. Slate roof, heated by stoves, no cloak rooms, blackboards painted on walls, no ventilating ducts.

Room No. 1.—This room appears at one time, to have been a vestibule. It is 16 x 24 x 14 feet, contains sixteen desks, is lighted by two small windows, one on each side. This room is the high school room. The windows contain four lights each, and each light is 49½ x 14½ inches. The floor is badly worn, desks are old.

West room.—Is 24 x 30 x 14 feet. Three windows and transom over door. The windows contain four lights which lights are 49½ x 14½ inches. Transom contains two lights same size. This room contains forty seats. The floor is in passible condition.

East Room.—This is the same size as the west room, and lighted in the same way and contains fifty desks, all of them for little children. The floor is much worn.

Summary.—This schoolhouse is an unfit place in which to hold school. and the site is bad in every particular. The schoolhouse is damp, and in very wet weather, is surrounded by pools of water. It is wrongly but sufficiently lighted, and it is wrongly heated and not ventilated at all.

Recommendations.—I recommend that this school building be condemned.

After consideration of the sanitary survey of the Gwynneville schoolhouse, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Gwynneville, Hanover Township, Shelby County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Gwynneville, Hanover Township, Shelby County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1st, 1909 and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, May 21, 1909.

Sanitary survey of schoolhouse at Galveston, Cass County, Ind., April 16, 1909, by H. M. Shultz, M. D., County Health Commissioner:

To the State Board of Health, Indianapolis, Ind.:

Gentlemen—By request of Dr. J. N. Hurty, I submit the following report of my inspection of the schoolhouses at Galveston, Cass County, Ind., April 16, 1909. The high school building built in 1883, is located at the western part of town, and stands on a lot about 250 x 270 feet, with an elevation of four feet at the street line, and about six feet at the building line. There is only one graded street and cement sidewalk along the North boundary, the other boundary lines being alleys, ungraded. The school building is of brick, two stories and cupola, facing the east. A brick walk runs to the eastern alley, and a cement walk runs diagonally to the north east corner ending by three steps on the cement walk of the north boundary. A grove of trees stands to the south of the building, giving ample shade, and there is ample playground in the lot of well graded gravel. At the northeast corner of the building there is a drilled well said to be over one hundred feet deep. The water is of excellent flavor but it has never been analyzed. At the entrance on the east there is a rise of four steps leading into a hallway about 20 x 30 feet from which the two assembly rooms, two basement entrances, a recitation room, and the stairway to the floor above, are reached. There are two stairways to the basement; one

to the right of the front entrance for the female students, and the other to the left for the male students. The basement lies under the whole building, with a partition of wood running east and west through it dividing the male from the female soil closets. The heating plant, hot air furnace, of two stoke holes seem to be adequate except on the coldest days. The air for the cold duct should come from the outside, but for the most of the time is taken from the hallway on the first floor. The basement was dug out after the schoolhouse was completed a number of years, and as the foundations were carried only a couple of feet underground, there is a shelf running clear around the wall about three feet high, as a retaining portion to keep the wall intact. The basement has about seven feet clearance from floor to ceiling, but this condition of the wall and the shelf should at once condemn the whole building as very unsafe, everything being perfect. There are two assembly rooms on the first floor, and one small recitation room. This recitation room seats about twelve students, being 10 x 14 feet and is very poorly heated and overcrowded. It was originally intended for a cloak room. The assembly room on the north is 33 x 25 feet with three windows on the north, and two facing west, and seats fifty students. A closet in the partition south 12 x 3 feet gives plenty of closet room. The assembly room, 1st floor, to the south is 33 x 25 feet and has a seating capacity of forty-two students. There are three window spaces to the south and two spaces to the west. A wrap closet in the partition wall of 12 x 3 feet dimension and amply lighted gives plenty of room for clothing. Cold air ducts for supposed ventilation, 18 x 18 inches, set high in the wall, are in either closet, but give very poor satisfaction. The second floor is reached by a stairway, eight feet wide, with a landing stage half way up. This stairway enters a hallway 20 x 20 feet from which lead two doors into either of the assembly rooms, one door into a recitation room, 12 x 18 feet, seating fifteen students and very poorly heated, and lighted by two windows. The assembly room, south, has the dimensions 33 x 25 feet, and is lighted by three window spaces on the south and two on the west. A cloakroom is between stairway and this room to the east. 14 x 6 feet, and lighted by one window space. All the window spaces are 10 x 3 feet, with eight panes of glass, 28 x 14 inches. The ceilings on the lower floor are sixteen-foot, and those of the second floor are fourteen-foot. This school building should be condemned at once as very unsuitable for school purposes as it is unsafe and unsanitary. The soil closets are connected with a small furnace which keeps the closets comparatively sanitary by daily burning the deposits. The primary school is housed in an old school building in the southeastern part of town. The building is frame, two stories of which the lower floor only is used. The building is 30 x 40 feet, faces the south, with three windows on the east and two on the north. Entrance to the south. The ceiling is a ten-foot one and the room has seats for fifty-two students.

The room is heated by a large base burner set in the centre of the room, a centre aisle several feet wide being in this room. The seats face the north. The water from this room is from a nearby residence, and the soil closets are in the rear of the building.

This building was condemned many years ago for school purposes, but

the overcrowded condition of the other building necessitated using the lower floor of this building for the primary grades.

After considering the above survey, the following proclamation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Galveston, Cass County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Galveston, Cass County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, May 21, 1909.

SPECIAL MEETING STATE BOARD OF HEALTH.

June 25, 1909.

Called to order by President.

Present: Drs. McCoy, Tucker, Hurty.

The President announced the object of the meeting was to consider and act upon reports concerning the protection of streams and to consider any other matters the Board wished to take up.

BURNEY SCHOOLHOUSE.

The following communication was read:

GREENSBURG, Ind., June 1, 1909.

State Board of Health, Indianapolis, Ind.:

Dear Sirs.—I have received your notice condemning schoolhouse at Burney, in Clay Township, Decatur County, Indiana. I have plans prepared for the construction of a new schoolhouse at this place and wish and intend to build the same as promptly as I reasonably can do so. However, it will not be possible, at this date, to build a new and adequate schoolhouse within this vacation, and especially to secure a first class building. For this reason, I would ask permission to use the present building, with such temporary repairs as can be made for the ensuing school term. If

this permission is granted I expect to make arrangements to have a modern school building at this place by the commencement of another school term.

Hoping you will give this prompt and favorable consideration, I remain,
Very truly yours,

C. S. WRIGHT.

After discussion of the Burney school matter, the following was unanimously adopted:

EXTENSION OF CONDEMNATION.

June 26, 1909.

Whereas, The State Board of Health is satisfactorily assured by the school authorities, that it is impossible to construct a new building by the time of opening school in the fall, and

Whereas, The said authorities have promised to conform to the rules of the State Board of Health, and provide adequate and sanitary accommodations for the school children, therefore, it is

Ordered, The date of condemnation of the schoolhouse at Burney, Clay Township, Decatur County, is extended to June 1st, 1910.

ROME CITY SCHOOLHOUSE.

The following letter was read:

ROME CITY, Ind., June 17, 1909.

State Board of Health, Indianapolis, Ind.:

Dear Sirs.—By order of the State Board of Health, our school building at Rome City, Ind., has been condemned and unfit for school purposes. Now, then we kindly ask the State Board of Health to extend those condemnation proceedings one year, in order to give us time to construct a new building. It will be impossible to erect a new building and have it completed in time for school this fall, hence we ask permission to use the old building for school purposes until the new one is completed.

We expect to proceed at once with the work on the new building and in all probability we will not be able to complete the work before June 1, 1910, or later.

The new building will be a modern structure and will cost in the aggregate, about \$25,000.

The old building is not a bad one, it is perfectly safe in every respect, only it does not fill all requirements of the State Board of Health for a commissioned high school.

Kindly grant our wishes,

Very truly yours,

C. F. HOLSINGER.
President of the Board.

After discussion of the Rome City matter, the following resolution was unanimously passed:

EXTENSION OF CONDEMNATION.

June 26, 1909.

Whereas, The State Board of Health is satisfactorily assured by the school authorities, that it is impossible to construct a new building by the time of opening school in the fall, and

Whereas, The said authorities have promised to conform to the rules of the State Board of Health, and provide adequate and sanitary accommodations for the school children, therefore, it is

Ordered, The date of condemnation of the schoolhouse at Rome City, is extended to June 1, 1910.

LAGRO SCHOOLHOUSE.

The following letter was read:

LAGRO, IND., June 21, 1910.

Dr. J. N. Hurty, Secy. State Board of Health, Indianapolis, Ind.:

Dear Sir.—The State Board of Health having condemned the school at Lagro and being unable to build this year on account of the limited time, I ask that you extend to us a year's time, that we may put ourselves in shape to start early after the next term of school is out.

The township was joint with the town of Lagro until the last two weeks when the town council dissolved the school corporation of Lagro and deeded their property and turned their funds and records to the township. We will start at once getting plans and making all other arrangements to erect a modern and up-to-date school building.

The present building will be placed in good repair for the term commencing next September.

Kindly inform me as early as possible, your action.

Yours very truly,

D. E. PURVIANCE,
Township Trustee.

After discussion, the following resolution was unanimously adopted:

EXTENSION OF CONDEMNATION.

June 26, 1909.

Whereas, The State Board of Health is satisfactorily assured by the school authorities, that it is impossible to construct a new building by the time of opening school in the fall, and

Whereas, The said authorities have promised to conform to the rules of the State Board of Health, and provide adequate and sanitary accommodations for the school children, therefore, it is

Ordered, The date of condemnation of the schoolhouse at Lagro is extended to June 1, 1910.

MARKLE SCHOOLHOUSE.

The following communication was read:

MARKLE, IND., June 23, 1909.

Dr. J. N. Hurty, Secy. State Board of Health:

Sir.—In regard to the school building proposition at Markle, it is the intention of the Board of Education at Markle to better the condition of the school building at this place. As a guarantee of good faith, we will submit the following:

We, the undersigned members of the Board of Education of the town of Markle, Ind., do hereby pledge ourselves to erect a new or remodel and add the necessary additions to the present school building, making it sanitary throughout. We further pledge ourselves to at once secure the services of a reliable architect to draft plans of said improvements, and submit the same to the State Board of Health for their inspection and approval. Said building to be completed and ready for opening of school not later than Sept. 10, 1910, and inasmuch as the present building has been condemned by the State Board as being unsanitary, we would kindly request that we be granted an extension of time of one year or until June 1st, 1910, in which to make necessary repairs.

We would further request that we be given a reply at your earliest convenience, so that we may know just how to proceed.

Very respectfully,

(Signed)

I. S. Shideler, Pres. B. of E.
Julius Yoos, Treas.
J. W. McCance, Secy.

After discussion, the following resolution was unanimously passed:

EXTENSION OF CONDEMNATION.

June 26, 1909.

Whereas, The State Board of Health is satisfactorily assured by the school authorities, that it is impossible to construct a new building by the time of opening school in the fall, and

Whereas, The said authorities have promised to conform to the rules of the State Board of Health, and provide adequate and sanitary accommodations for the school children, therefore, it is

Ordered, The date of condemnation of the schoolhouse at Markle, is extended to June 1, 1910.

GREENFIELD SCHOOLHOUSE.

The Secretary stated that by request of the School Trustees of Greenfield and the request of citizens he went to Greenfield April 27th to inspect sanitary features of Greenfield schoolhouses and make recommendations. The letter and report of the Secretary follow. The suggestions were adopted and are now being instituted.

Upon consideration, the letter and report were accepted and ordered placed in the minutes.

April 28, 1909.

Mr. Samuel J. Offutt, Secretary School Board, Greenfield, Ind.:

Dear Sir.—I enclose herewith my report of inspection of the schoolhouses at Greenfield, Indiana. You will find recommendations attached to the report of each schoolhouse.

Permit me to give the sanitary conditions which should be present in all schoolhouses. They are necessary in order to preserve the health of the school children and thus to increase their efficiency and happiness.

(1) The site should be high and well drained; and the children should have ample playground facilities.

(2) The building should be substantial, and should have beneath its entire area a basement with a ceiling not less than nine feet high, and the floor of the same well cemented. The first floor of the building should be at the very least three feet above the ground level; it would be better to have it four feet. This would give ample light and ventilation to the basement. The cement floor would keep out the ground air which renders houses damp and musty.

(3) The heating apparatus should be such as to easily maintain a temperature of 68 degrees Fahrenheit in zero weather. It should also be provided with a humidifying apparatus so that humidity can be properly maintained. The air at all times should have a humidity of not less than 50 per cent. Dry air causes dry noses and throats and induces diseases of the respiratory passages. The air after rains is always refreshing because the rain has washed the dust away and dampened the air.

(4) The ventilating apparatus should be such as to change the air in the rooms four times every hour. Every child must have thirty cubic feet of air per minute in order to live the life God intended it to live.

(5) Lighting. All rooms should be lighted from one side only and the glass area should not be less than one-fifth of the floor area. The desks should be so arranged as to permit the light to fall over the left shoulders of the pupils. Neither teachers nor pupils should be required to look straight into the light for this strains and injures the eyes and the reflex action causes indigestion and nervous breakdown. In all rooms which are lighted from two sides, astigmatism and short-sightedness are being forced upon a certain number of the children.

(6) Every schoolhouse should be supplied with efficient water closets or efficient dry closets. Outhouses are always an abomination. Their effluvia fills the air at certain times to the discomfort and ill health of the neighborhood; they pollute the earth and finally pollute the water supply, causing typhoid and diarrheal diseases; they are open to flies and the filth is carried by these insects into the house and planted upon food, and thus typhoid and other intestinal disorders are produced. The out door closet is more than a nuisance; it is an abomination pure and simple.

In judging the Greenfield schoolhouses, the above points are the basis upon which my judgment rests.

Concerning consumption I wish to say: Germs cause consumption, but they cannot grow in a human body that is well supplied with fresh pure air, that is supplied with plain, well cooked food and which is kept clean. The breathing of foul air is the great inducing cause of consumption. Such places as your trolley station with its nasty polluted air, are the consumption breeders. Poorly ventilated bed-rooms, offices, trolley cars, school-rooms, churches, etc., are to be feared.

Very sincerely yours,

Secretary.

Report of inspection of schoolhouses at Greenfield, Indiana.

To the School Board of Greenfield, Ind.:

Gentlemen.—Upon invitation of citizens of Greenfield and upon order of the State Board of Health, I made sanitary inspection on April 26, 1909, of the following schoolhouses in your city: High School, Longfellow School, Lincoln School.

HIGH SCHOOL.

A substantial, handsome stone building.

Ventilation: In cold weather the ventilation is not up to the standard, as determined by inspection of the Smead ventilating system and by the answers to my questions by teachers. The Smead system of ventilating has long ago been abandoned by sanitarians as inefficient, because it has been found it does not draw air from a school-room in sufficient amounts to thoroughly ventilate. To try to aid the system by opening windows results in failure, because open windows largely suspend its action. As said the Smead system of ventilation is not a practical success and is not recommended by sanitary authorities.

Heating. In cold weather the heating is not sufficient. This conclusion was reached by comparing the radiating area of heating surface of the furnaces with the space they were required to heat, and also by answers to my questions by teachers. When natural gas was used continuously at high pressure in the furnaces, there probably was no complaint, but the results were obtained under circumstances which do not now exist. With coal and intermittent firing it is very plain that the present heating facilities are inadequate.

Lighting. It is a law of sanitation that school rooms shall be lighted from one side only and the desks so arranged as to cause the light to fall over the left shoulders of the pupils. Neither pupils nor teachers should be required to look into the light because of injuries almost certain to result to the eyes and by reflex action to the nervous system and nutritional processes. Therefore, all rooms lighted from more than one side are wrongly lighted, and desks are wrongly placed if the light does not fall over the left shoulders of the pupils. By this standard all but two or three rooms are wrongly lighted. The amount of light in each room is sufficient.

Sewage Disposal: The dry closets in basement seem to work well when the stack-heater is in action. The draught downward through the hoppers and at the urinals and the paper burned in the pits indicated

good action as also did the absence of odor. It is concluded that the dry closets are well constructed, are adequate and work well. If at any time odor proceeds from these closets it may be concluded that the stack-heater is not working or that the accumulations are in excess of good reason.

Score: On the accepted system of scoring, this building scores only 70. It is 30 points below being considered "practically sanitary."

Recommendations: It is recommended that a heating and ventilating engineer be employed to make plans for a heating and ventilating system which will meet the requirements of the law. These are: Maintain a temperature of at least 68 degrees Fahr., and a relative humidity percentage of at least 50 in zero weather, also to change the air in each room at least four times an hour. It is obvious it is not practicable to correct the faulty lighting, but, by means of double roller shades at the windows in the rear of the pupils, the ill effects would be somewhat mitigated. The dry closets should be burned out at least once each week and oftener if examination shows the accumulations to be in unusual amount. The burning out will be facilitated by using crude coal oil. Crude oil is suggested simply because it is cheap. The present drinking fountains should be abandoned and the fountain or "babbling" variety put in.

LONGFELLOW SCHOOLHOUSE.

Ventilation: The ventilation at the Longfellow school is inadequate. There are no ventilating ducts, except one small opening in each room opposite one radiator. Said small opening cannot admit sufficient air for the pupils. As there are no exit ventilating ducts, it may be truly said that the Longfellow School Building is unventilated except by windows and doors. This means no ventilation in cold weather without draughts.

Heating: The heating is efficient. The steam radiators evidently have ample radiating surface.

Lighting: The amount of light is sufficient in each room, but all rooms are lighted from two sides, which is wrong, and already pointed out. This defect may be greatly mitigated by supplying the windows with double roller shades; one for each upper and one for each lower window sash.

Sewage Disposal: The water closets are satisfactory.

Score: This schoolhouse scores 65.

Recommendations: It is recommended that all radiators against outer walls be supplied with openings to the open air. These should be large enough to admit sufficient air to make a complete change in the room at least four times every hour.

Exit ventilating ducts should also be supplied of sufficient capacity to draw out the air of each room at least four times every hour. It would not be difficult or expensive to put in such ducts of galvanized iron. All said exit ducts should have in them hot pipes from the steam heating system to lift the interior column of air and cause them to draw.

It would be possible to close up the windows on one side of each room in this schoolhouse and open some on the other lighted side. In one room the desks are wrongly placed, the light proceeding from the

back. As said, double roller shades would greatly mitigate the light trouble.

The present drinking fountains should be abolished and flowing fountains adopted.

LINCOLN SCHOOLHOUSE.

Ventilation: The ventilation is by windows and doors only, and this means there is no ventilation without draughts. The score on this point is zero.

Heating: The heating is by base burners. The law condemns heating by ordinary stoves. Ventilating stoves are permitted. When stoves are used the heating is uneven. The score on this point is zero.

Lighting: All rooms are lighted from two sides. This is wrong. If impracticable to change the windows all to one side, then the adoption of double roller shades will mitigate the situation.

Sewage Disposal: Sewage disposal is by outdoor privies. A method which is objectionable at all times and everywhere.

Score: This building scores 40.

Recommendations: It is recommended that a direct-indirect system of steam heating be installed; that, if practicable, the windows be changed to one side of each of the rooms; that galvanized ventilating ducts be installed provided with heating pipes and of sufficient size to change the air in the rooms four times every hour.

It is also recommended that well constructed and efficient water or dry closets be installed. The present drinking fountains should be abolished and flowing fountains installed.

Respectfully,

State Health Commissioner.

After discussion, the following was unanimously accepted:

INDIANA STATE BOARD OF HEALTH—DEPARTMENT OF FOOD AND DRUGS.

CIRCULAR LETTER No. 6.

Subject—"Lard and Lard Compound."

To the Manufacturers and Distributors of Compound Lard:

The definition of lard is as follows: "Lard is the rendered fresh fat from hogs in good health at the time of slaughter, is clean, free from rancidity and contains, necessarily incorporated in the process of rendering, not more than one (1) per cent. of substances, other than fatty acids and fats." This definition is amended to allow the use of not to exceed 5 per cent. of lard stearine. The addition of beef stearine, cottonseed oil or any other product to lard in any quantity is a violation of Section 2, Chapter 104 of the Acts of 1907, unless the product so made is properly branded. In order that the manufacturers and dealers in lard may understand the proper way to label goods which are made by adding stearine, fats and oils to lard, the State Board of Health of Indiana on _____, 1909, issued the following order:

Compounds of lard with beef stearine, cottonseed oil, lard stearine in excess of 5 per cent, or other stearine, fats and oils may be sold when labeled in black gothic letters at least one-half inch in height "Lard Compound," provided, however, that the amount of lard present must be in excess of 50 per cent. If less than 50 per cent. of lard is present in the mixture, the label should not bear the word "lard" and the goods should be labeled "Compound;" and provided also that all such mixtures and compounds shall, in addition to the words "lard compound" and "compound," declare in plain type not smaller than 8-point (brevier) caps the percentage of each ingredient present.

The use of such a label on a compound lard does not, however, authorize the retailer to fill an order for lard with lard compound, and dealers are warned that unless the purchaser knows, by reason of having his attention called to the label or by verbal explanation, that the goods are not pure lard, he will be held responsible for violation of the food and drug law.

REPORT UPON THE ESTABLISHMENT OF A LABORATORY FOR THE CITY OF VINCENNES, INDIANA.

By J. H. BREWSTER, Water Chemist.

This report represents a new step in the educational work that the State Board of Health is endeavoring to develop for the improvement of local sanitary conditions in the cities and towns throughout the State.

The work consisted of the establishment of a chemical laboratory as a branch of the City Board of Health of Vincennes, and the instruction of the Secretary, Dr. P. H. Caney, who is to be in charge, in the methods and technique of making the sanitary analysis of water and the interpretations of the results. The laboratory is for the purpose of investigating the character of the city milk supply; the sanitary conditions of the domestic wells, which are used as a source of drinking water by a majority of the population, and also to determine and control by daily tests the quality of the city water supply.

In accordance with a request made by Dr. Caney, the State Board of Health ordered for him the necessary laboratory equipment, and on March 25th, Mr. Brewster of the Laboratory of Hygiene, visited Vincennes to install the apparatus and open the laboratory. The preparations of solutions and the manner of making a chemical analysis of water were immediately taken up later, several samples of well water were analyzed and the results explained. Complete instruction in the preparation of media for bacteriological counts and the presumptive test for B. Coli was also given and was followed by a four days' test of the filtration plant connected with the city water supply.

The milk supply of the city comes from a large number of venders living in the rural districts. There is also one milk condensing plant, which supplies a portion of the population. The milk peddled by the venders is carried in large cans and is drawn off at the bottom through a faucet, thus giving reason for the belief that in many cases the milk sold does not reach the required standard for a whole milk, because of the cream rising to the top and not being thoroughly mixed when drawn.

Examinations will be made for preservatives, the per cent. of butter fat and, when desired, bacteriological examinations will also be carried out.

The City of Vincennes, at the present time, has no sewer system, the lack of which is responsible for a most deplorable condition of backyard sanitation. The customary manner for the disposal of domestic waste and human excrement is by use of outhouses and trenches dug in the sandy soil. As those become filled, or as the land is desired for building purposes, they are closed and new trenches dug. It was learned that as many as a dozen of these abandoned vaults have been found on an ordinary city lot.

The private well supplies of the city consists principally of shallow wells, which are dug in the sand and gravel to an average depth of thirty feet, without regard to the influence of these innumerable blind vaults, and from which it is clearly evident that these wells are receiving a greater or less amount of sewage infiltration. That this condition exists was shown in the few samples of well water that were analyzed for the purpose of instruction. Every shallow well examined, showed the presence of large amounts of chlorine, nitrates and nitrites, although in most of the cases, there was no evidence of bacteria of the colon type. This is due to the excellent quality of very fine sand and gravel which acts as a filtering material and so protects the water supplies. Without doubt the absence of typhoid fever and other intestinal diseases can be attributed to the exceptionally good quality of the pervious ground in which the wells are dug. But with the great increase in the amount of domestic waste, the land lying between the sources of pollution and the wells is becoming over-worked and unfiltered sewage will soon enter the well, and when this occurs, these diseases will unquestionably be very prevalent. There are, however, a few deep wells in the city which undoubtedly provide a good quality of water.

The source of the city water supply is from the Wabash River, which is purified by the process of rapid sand filtration. The plant is of the Continental type and is owned and operated by the R. D. Wood Company, of Philadelphia, and supplies water for both fire protection and domestic use. A description of this plant is given in the 1908 report of the State Board of Health. It is undoubtedly one of the best small water works stations now operating in the State of Indiana, and if properly handled, should at all times produce a water which is entirely satisfactory for drinking and domestic purposes. It is to be questioned, however, whether or not such operation is at all times carried out, inasmuch as it has been stated by the water company that during the periods when the river water is clear in appearance, there is no coagulant used in the process of filtration. In this type of a plant, the water passes through the sand beds at a rate which is entirely too fast to produce a suitable bacterial efficiency without the aid of coagulant.

During the time of the investigation, the river water was very turbid and the water company was filtering the water with the aid of coagulant, so that the results were much different from what would have been obtained had they not been using the coagulant. The mere fact that coagulant is needed to remove the dirt, shows conclusively that it is also needed

to a far greater extent to remove the bacteria which are much smaller than the particles of dirt that are carried by the water. The results obtained show a very peculiar condition existing and it is necessary that a complete investigation be made in order to state the cause of the conditions found. Samples of water were taken from the individual filters and also from the retaining reservoir and from the hydrant in the laboratory.

The bacterial reduction in the water, as shown in the accompanying table, is as good as could reasonably be expected from a plant of this type. The average efficiency was 99.1% with an average bacterial count of 200 in the filtered water. Of the seventeen samples analyzed, there were only three that did not answer exactly to the characteristic tests for B. Coll, and these three were very suspicious. There is a possibility that the beds were slightly fouled, a condition which could be readily removed by a thorough sterilization with steam and a good airing; this idea seems improbable in view of the large percentage of bacteria that were removed, and it also seems improbable that the river water, which contained during these tests an average of 26,500 bacteria per c. c., would contain such a large per cent. of B. Coll, or some other form of bacteria that so closely answers the tests for B. Coll, that when an average count of 200 and with some tests showing 50 bacteria per c. c. was found in the effluent, this test would show positive results in every determination, unless the beds were foul. It was learned, however, that while the Wabash River at Vincennes during this period contained an average of 26,500 bacteria per c. c., at the same time, the river at Terre Haute, according to the records kept at the filtration plant for the Terre Haute Water Works Company, averaged but 6,000 bacteria per c. c., and for the last month B. Coll was present in the water but 60% of the time.

It is known that there are large quantities of refuse matter and trade waste from breweries and distilleries entering the river below the water works station at Terre Haute. This trade waste contains great numbers of bacteria and there is a possibility, and indeed a reasonable certainty that the sewage from the city of Terre Haute, and especially the brewery waste, is damaging the water supply of the city of Vincennes.

The establishment of the laboratory will enable the Board of Health of Vincennes to have full control of the milk supply to prevent its adulteration and improve its sanitary condition. It will also enable the health officers to learn what wells are receiving sewage and to determine the quality of the city water supply and the efficiency of operation of the filtration plant of the city.

The maintenance of health laboratories is no longer an experiment in municipal economics, and Vincennes is to be congratulated upon the step in advance her health officers have taken and which will prove so valuable in the protection and betterment of the health conditions of the city.

TABLE SHOWING BACTERIAL EFFICIENCY OF THE FILTRATION SYSTEM OF THE VINCENNES WATER SUPPLY CO.

Date.	Lab. No.	Source.	Bacteria Per c. c.	B. Coli.	D Efficiency.
3-29-09.....	1481A	Raw.....	52,500	—	—
3-29-09.....	1482A	Fil. No. 2.....	90	—	99.8
3-29-09.....	1483A	Clear Well.....	480	—	99.1
3-30-09.....	1484A	Raw.....	25,000	—	—
3-30-09.....	1485A	Fil. No. 2.....	300	—	98.8
3-30-09.....	1486A	Clear Well.....	80	—	99.7
3-30-09.....	1487A	Hydrant.....	200	—	99.1
3-31-09.....	1488A	Raw.....	13,000	—	—
3-31-09.....	1489A	Fil. No. 2.....	65	Susp.	99.6
3-31-09.....	1490A	Clear Well.....	200	—	98.5
3-31-09.....	1491A	Hydrant.....	300	—	97.7
4-1-09.....	1492A	Raw.....	16,000	—	—
4-1-09.....	1493A	Fil. No. 1.....	50	—	99.7
4-1-09.....	1494A	Fil. No. 2.....	150	—	99.1
4-1-09.....	1495A	Fil. No. 3.....	400	Susp.	97.8
4-1-09.....	1496A	Fil. No. 4.....	100	Susp.	99.4
4-1-09.....	1497A	Clear Well.....	200	—	98.8
Average efficiency.....					99.1

SMALLPOX AT VEEDERSBURG.

By A. W. BRAYTON, M. D.

Indiana State Board of Health:

Gentlemen—Upon order of the president of the Board of Health, Dr. McCoy, through Captain Anderson, I this day, June 9, 1909, investigated the city of Veedersburg, on account of smallpox there, the validity of which disease was in question and advice and counsel needed. By agreement, I met the secretary of County Board of Health of Fountain County, Dr. D. R. Hicks, of Covington, at Veedersburg, by way of Big Four train, at 10 a. m. today. Dr. Hicks' letter to the Board is transmitted herewith.

Dr. Hicks and the writer first visited the livery stable and saw the first case, now recovered, but with well-marked lesions remaining from the disease.

Lee Moers, nineteen years of age, unvaccinated, was the first case. He had been to Danville, Ill., and elsewhere, and was sick about April 1st. His brother, eleven years, and his two sisters, seven and twelve years of age, also had smallpox and recovered. Father and mother being vaccinated, were not affected.

Dr. Hicks and myself then visited a group of four families affected as follows:

Father, James Stonebreaker, vaccinated and not affected. 1. Boy, "Roxie" (son) seventeen, sick two weeks ago and recovered. 2. Jonas Stonebreaker, prodromal stage and unvaccinated. 3. Aso Stonebreaker, son, sixteen, prodromal stage, and unvaccinated.

Second Family: 1. Chas. Stonebreaker. 2. Wife of above. 3. Child, Morris, year old, all unvaccinated. Wife in prodromal stage in bed with fever, etc.

Third Family: In same group of cottages, all within one square. 1. David Chappell, thirty-two, vaccinated and free from disease. 2. Viola, twenty-eight, sick with smallpox, but not vaccinated before. 3. Child, Wovelerlin, two years old, well broken out, nearly confluent, the worst case in the town. 4. Ernest Chappell, four years. Smallpox. Child six years old, well over the disease. The above had been exposed to the Meors cases.

Fourth Family: 1. Mr. Greenville Harper's family, all exposed to Meors family. Mr. Harper just in eruptive stage, unvaccinated. 2. Mrs. Harper, recovering. 3. Ella Harper, fourteen, in prodromal stage. 4. Maggie Drummeral, relative, forty years old, was vaccinated in Danville, some years ago, and escaped the infection. 5. Hattie Harper, fifteen years, eruptive stage, not vaccinated. 6. Glen Harper, a boy of twelve, eruptive stage, mild, not vaccinated. 7. David Harper, seventeen years, eruptive stage, mild, not vaccinated. 8. Roley Harper, eight years old, about well of the eruption.

Fifth Family: 1. Lenly Harper, twenty-two years old, not yet affected. 2. His wife, Belvo, about eighteen, has thirty to forty eruptions of the disease. No children, neither vaccinated. Relating to the Harper family, a son and daughter-in-law, all the above are in the same sequestered group of houses on a side street. They have been seen by the Veedersburg health officer, Dr. E. W. Kirk. He failed to get to the neighborhood as soon as Dr. Hicks, as he was getting the physicians together. His attitude was somewhat timid, fearful, as he said, that if he looked after them personally, as a physician, it might impair his practice. I told him his duty as city health officer made it compulsory for him to know their condition from day to day, either personally or through appointed or family physicians. As the people are laborers, their needs will be met by the city health officers.

The sixth and last family is that of Mr. W. H. Ross, a mile away from the first group of houses mentioned above, and rather isolated, near the outskirts of the town of 1,800 or 2,000 people. I saw the Ross family with their family physician, Dr. F. A. Shoaf, well qualified and fearless. Five in family, man, wife and three children. 1. The oldest child, Pier-son, had recovered from a widespread eruption, the flat sores were over two hundred in number below his knees. He had been "downtown" in the beginning of the eruptive stage. 2. A babe of one year had one pock on the forehead, a light case, but with the usual prodromes. 3. Mother with half a dozen lesions visible, early eruptive stage. 4. Father not as yet affected. 5. Another case, but history was not taken. All this group vaccinated by Dr. Shoaf as soon as visited, if I am rightly informed.

In the office with Dr. Shoaf, with Dr. Hicks and Dr. Keer, the officers, and also Drs. W. H. Ross and C. C. Edson, we held a discussion. The town marshal was also present. The conditions were stated and the law emphasized. Free vaccination for the indigent was insisted upon.

I got in touch with the mayor of the city and advised him as to the situation by telephone. The schools are not in session. The present cases will be cleared up by the Fourth of July, I think. There may be many others, as it is estimated there are 1,000 unvaccinated people in the town. Literature was left with each family and also with the city health officer

for further use. I also advised Dr. Hicks to visit the cases at least once a week to see that the quarantine is enforced, that vaccination is secured, and that the town of Covington, and the country at large is protected from further invasion, and that as county health officer he has absolute right and authority to visit and advise as may be needed.

I send herewith bill for services and report.

After reading and discussing, the above report was accepted and ordered to be included in the minutes.

SEWAGE DISPOSAL AT MEROM.

By J. H. BREWSTER, Water Chemist to the State Board of Health.

Gentlemen—The State Board of Health received, on May 3, 1909, a communication from J. J. Parker, M. D., health officer at Merom, Ind., requesting advice as to the disposal of the sewage from the college buildings and dormitory in a way satisfactory to the State Board of Health, and in conformity with the requirements of the Stream Pollution Law. In response to this request, on May 12, 1909, the Board caused an investigation to be made of the college and its surroundings by J. H. Brewster, of the State Laboratory of Hygiene.

The results of the investigation show that Merom has no public water supply and that the water for domestic use is obtained entirely from private wells. There is no sanitary sewer system and outhouses are used exclusively. In order that the college may be provided with a sanitary system of plumbing and sewage, there has been installed a private system in which the water is taken from wells and by means of pressure tanks supplied to all parts of the college buildings. About three years ago a system of plumbing was installed to afford toilet and bath privileges, at a cost of about \$6,000, but owing to poor workmanship it soon became a nuisance, and to the unsanitary conditions caused by it was attributed some sickness among the students. In order to abate this nuisance, the entire system was condemned and has been replaced by a proper system of good plumbing, but until a suitable system of disposing of the sewage has been installed the outside privy vaults will continue to be used.

The college is located on one of the higher portions of the town, one-half mile from the Wabash river, and on account of its location, there is a natural drainage in almost every direction which will permit the installation of any disposal system that is desired. The problem of obtaining a satisfactory system is simply one of determining the most economical way the sewage can be properly cared for. It was proposed that a sewer be run into a creek which has its origin but a short distance from the college and empties into the Wabash river. Such a plan would be contrary to the Stream Pollution Law. Another suggestion is to build a sewer to the Wabash river and to allow the untreated wastes to run direct into the river.

While the pollution of the Wabash river at this point is not unlawful at the present time, since it forms a boundary between the States of Indiana and Illinois, this system of disposing of sewage is to be avoided if

possible, as the State of Illinois may in the near future pass a stream pollution law like that of the State of Indiana, and in such event the Wabash river could no longer be used as a sewer.

From information gathered at the time of the investigation, the estimated cost of running a sewer from the college to the Wabash river would be between \$600 and \$700. If a system of sewage disposal by means of a septic tank and filtration beds was installed, from which the effluent could legally be run into the near creeks, the problem would be solved for all time to come. The college has an average of about one hundred students, and it is estimated that a septic tank of two thousands gallons capacity would be of adequate size to treat the sewage from the school buildings. The cost of such a septic tank would not exceed \$200, The cost of filter beds to handle this amount of sewage ought not to exceed \$300. If to this amount, \$200 is added for other expenses, the entire cost for the installation of the system would be but \$700. Inasmuch as the cost of installing a sewage disposal system, which would take care of the sewage in a sanitary way, would not exceed the cost of running a sewer to the Wabash river, it is suggested that this method be adopted.

After consideration, it was ordered that the above communication be sent to the authorities of Merom College, with the recommendation that the suggestion of Mr. Brewster be adopted.

Inspection of School District No. 6, Lawrence Township, Oaklandon, Ind., Trustee M. A. Beagle, Oaklandon, June 24, 1909, by J. L. Anderson:

The schoolhouse is in the southern part of the town, approached by gravel road and gravel walk. The site is somewhat lower than the surrounding land, but can be very easily drained. The lot comprises about two acres, sloping to the southwest, and drainage to a creek about one-half mile southwest of the site. There is a dug well on the premises, about forty feet deep, with an iron pump. North of the schoolhouse is the coal shed and west of the building are the two outhouses, both screened and about one hundred feet apart. There is no vault dug and the excrement lies upon the ground.

The building is a two-story brick, with slate roof. Down-spouts apparently in good condition, but from indications the roof leaks. Foundation is of stone and in good condition, but not over eight inches above the ground in some places. The walls of the building are in good condition, no cracks or bulges. No basement, joists about four inches from the ground. Building fronts east with two entrances, two double doors to each entrance, opening outward. North door opens into cloakroom, 9 x 14 feet, and from there directly into the primary room. The south door opens to cloakroom, 9 x 14 feet, to the stairway and also to the third, fourth and fifth grade rooms.

The primary room, north end of the building, is 30 x 30 x 12 4/10 feet. Three windows are on the north and west and one on the east. Blinds to all windows, window frames 9 x 3 feet, windows can be raised and lowered. Walls are papered. Slate blackboards in good condition. Seats in good

condition and adapted to age of pupils. Floors are worn, but oiled and kept clean and in good condition. Heated by coal stove, with sheet-iron jacket around it. No ventilating except by windows. Number of pupils enrolled, forty-eight.

The third and fifth grade room on the south side, same size and conditions as primary room, enrollment thirty-two. Stairway four feet wide and reverses with four-foot landing.

The second story rooms, the same size and conditions as below. The partition between them is movable, so that the two rooms may be thrown together for public meetings. The sixth, seventh and eighth grade pupils are in the south room, enrollment of about twenty-five.

The high school occupies the north room, with an enrollment of about twenty-five. The paper on this room shows that the roof has been leaking, and in some places the plastering is cracked and broken and the paper peeled off. There is no ventilation in this room, except by windows, which are on weights. The superintendent's office has been partitioned off in the second story of about 14x14 feet, with a 12-foot ceiling. The janitor of the building reported that it was impossible to properly warm the rooms during extreme cold weather, also that he had trouble with getting a good draught from the stove. Sometimes the flues seemed to stop up and refused to draw, and rooms were filled with smoke.

As a summary, I would say that the building is strong, substantial, no danger of collapse, but the winding stairway in front would make it difficult for the pupils in the upper story, to get out in time should a fire break out. There is no ventilation except by raising windows. The building is too low on the ground. There were a great many complaints of the lower classes, of colds and sore throats during last winter.

I was accompanied on this inspection by Mr. Hamilton, a hardware dealer, and the janitor who had charge of the building last winter, and a couple of other gentlemen who were patrons of the school. They were all of them very anxious that something be done to assist them. They have a good high school, but could not be recognized by the State University as a commissioned high school, on account of the condition of the building, and that their township was able and willing to build a new schoolhouse that would accommodate the number of pupils necessary and that were continually being added to the school, and they said they thought it would be a matter of economy to build a new building, instead of trying to remodel the old building.

Upon consideration of this matter, the following proclamation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Oaklandon, District No. 6, Lawrence Township, Marion County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That said schoolhouse at Oaklandon, District No. 6, Lawrence Township, Marion County, Indiana, is condemned for school purposes after

June 25, 1909, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be prosecuted.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, June 25, 1909.

POLLUTION OF STREAM AT PRINCETON.

UNITED STATES OF AMERICA, STATE OF INDIANA.

Before the State Board of Health.

The Board of Health of the City of Princeton vs. City of Princeton, Board of Commissioners of the County of Gibson, School Board of the City of Princeton.

The plaintiff, Board of Health of the City of Princeton, complains of the above named defendants and says that the defendant city of Princeton is an incorporated city, incorporated under the laws of the State of Indiana, and situate and being in Gibson County in said state; that each of said defendants is discharging and permitting to be discharged sewage into a natural water course, running through and into said city of Princeton and is thereby injuring for domestic use, the character of the water into which the same is discharged therein, to the injury of the public health of said city:

Wherefore, plaintiff prays that the State Board of Health inquire into and investigate the conditions above mentioned and proceed further in the premises as provided by law.

A. L. ZILIAK,
Secretary Princeton Board Health.

May 19, 1909.

State Board of Health, Indianapolis, Indiana:

Gentlemen—On the 24th of April, 1909, the State Board of Health, received from A. L. Ziliak, Secretary of the Princeton Board of Health, a petition entitled, The Board of Health of the City of Princeton vs. City of Princeton, Board of Commissioners of the County of Gibson, School Board of the City of Princeton, praying that the Board investigate pollution of a natural watercourse by sewage to the injury of the character of the water and of the public health. In accordance with this petition, Mr. J. H. Brewster was instructed to visit Princeton and to investigate the conditions referred to in the petition. Mr. Brewster visited the city on the 28th and 29th of April, and upon his return submitted a report which is appended. It is evident from the report that the situation is most unsatisfactory and that the citizens of Princeton should be relieved from the necessity of longer enduring such deplorable sanitary conditions. It is evident that the use of the upper and lower branches, as the open sewers are designated, for the disposal of domestic sewage produces conditions which are detrimental to public health or comfort, and, therefore, in violation of Section 1 of Chapter 24 of the Acts of 1909.

The report, which is accompanied by a map of the city of Princeton showing the branches, gives in detail the unsanitary conditions and calls attention to the fact that a sanitary sewage system and sewage disposal plant should be installed at once.

It therefore seems proper that the State Board of Health issue an order against the City of Princeton, the Board of Commissioners of the County of Gibson and the School Board of the City of Princeton, that they construct such sanitary sewage disposal plant as will remove the unsanitary conditions now existing in the City of Princeton.

It seems further proper that, in compliance with Chapter 24 of the Acts of 1909 that the City of Princeton, The Board of Commissioners of the County of Gibson and the School Board of the City of Princeton be notified of the appointment of a hearing at which time they may be present.

THE SEWAGE SYSTEM OF THE CITY OF PRINCETON.

The city of Princeton is located in the central part of Gibson County, Indiana, about two miles from the Patoka River. The land in this section of the country is somewhat rolling and though generally level, the city may be described as located on three small hills with the two valleys between draining the surrounding land, the run-off from which forms a continuous flow of water through two creeks which have their head waters in the city and which, after coming together below the city, finally flow into the Wabash River.

The city supply is furnished by a private corporation which takes the water from the Patoka River and pumps it direct to the consumer without filtration. The water is soft in character and of as good a quality as could be expected from any surface flow, since it receives but very little upstream sewage at this point. The only place of size on the Patoka River above Princeton is Jasper, about seventy miles by water up stream and which puts but very little sewage into the river.

At the present time, Princeton has no complete sanitary sewer system, although there are a few storm sewers to which many toilets and baths are connected, in spite of the fact that these sewers were not installed or designed for this purpose. The principal manner in which the domestic sewage is disposed of, is by running private drains in the most convenient way to one or the other of two open ditches. These ditches, or branches as they are called, are known as the upper and lower branches. The lower branch drains the southern, or best residential portion of the city. The upper or northern branch, which is not as large, takes care of the remainder of the city. There is also a lake in the city park north of the upper branch, which receives the sewage from a few houses that can drain more easily in that direction.

Nearly all the houses in the city are now equipped with bath and toilets which drain into these branches, the drains being carried either on top of the ground or just under the surface. These drains are usually constructed of tile, but in some cases they are of wood or simply an open trench. The branches, when they are flowing at their normal capacity, are very small streams about six inches in depth and from six inches to two feet wide. In dry seasons, they nearly dry up and during this time, large piles of fecal

matter is deposited from the many drains that empty into them, where it remains until a heavy rain washes these creeks. The odor caused by the emptying of domestic sewage into these branches is atrocious and can be detected for a long distance.

The sewage from the West School, which has about 500 scholars, empties into the South branch. A printing office located a short distance above the school, also discharges its sewage into the branch. The Kidd Hotel drains the sewage of an average of one hundred occupants into this creek. Other large buildings which drain into this branch are the Court House, City Building, Sanitorium and several of the churches. All of the dwelling houses located near the branch, drain directly into it, and those that are not so situated drain their sewage into the storm sewers wherever it is possible and is finally carried into the branch. In some places the sewage flows through the gutters before reaching the storm sewers and in others the storm sewers carrying domestic sewage discharge into an open gutter and flows through the street before reaching the branch. The court house has a sewer of its own known as the "county sewer," which carries all of the court house sewage, together with the drainage of the entire square, into the lower branch. It runs into a cesspool made of brick which is placed on the water bank, the idea being to give an opportunity for the fecal matter to be decomposed by septic action and to allow only the overflow to enter the creek, but this arrangement caused the sewage to back up into the street, a hole was knocked in the side of the cistern and now the sewage is permitted to go directly into the creek.

It is estimated that in all there are about two hundred drains emptying into the lower branch and in many cases each one of these drains has several families connected to it. This does not include the large number of houses that drain into the storm sewers. During the summer months, mosquitoes coming from these branches are a pest. These mosquitoes have only been noticed since domestic drainage has been permitted to empty into the branches, one citizen living along the branch claiming that when he moved to Princeton, fourteen years ago, there were hardly any mosquitoes to be found. People living along this branch can not sit on their porches in the summer time on account of the odor coming from it and complain that they have to keep their windows closed in the day time and sleep with them closed at night on account of the offensive odor.

During periods of heavy rain, the collected fecal matter is washed away and deposited farther down the stream, this keeping the whole creek in a filthy condition. It was stated by one citizen that when he was catching bait fish two miles below town, he got into so much deposited sludge from these sewers that he was obliged to burn his clothes on account of the odor they carried. The conditions existing along the upper branch are very similar to those along the lower branch, although there is a much larger amount of sewage entering the lower branch than there is going into the upper. The sanitary conditions with respect to outhouses is, however, apparently much worse than it is along the lower branch. There are not as many drains entering this branch from houses that are located some distance from it as most of them still use outhouses.

It is probable that the sewage seeps through the intervening soil and if it does not finally reach the branch as it seeps through the ground, it

does come in contact with the private water supplies. For this reason, the private wells are now in a very bad condition. There is a city ordinance against digging cisterns to the quick sand, but it is probable that there are many in use of which nothing is known. The outhouses in many cases along this branch are placed directly over the flow of water and in other cases, the vaults which are but a few feet from the branch are connected by tile or by digging a trench and allowing them to be flushed out only during the periods of heavy rains. It is estimated that the upper branch has about one hundred and fifty drains running into it.

Most of the public buildings drain into the lower branch, but the depot and a few others drain into the upper branch. This branch, in several instances, runs directly under the houses as an open sewer. There is one place along the upper branch where the drainage from a four-foot pipe has to pass through a two-foot pipe and for this reason when there is a large amount of storm water entering the sewer, it can not all be taken care of and backs up into the streets to a depth of about two feet. This water receives the domestic sewage from a great many house drains, the overflow of cisterns and the refuse flush from vaults and open trenches. Some of the houses drain directly into the street. In most cases, the drainage is carried through the gutters into the upper branch, although at times it is dried by the sun leaving the solid matter in the streets. It was desired at one time to drain the lake in the city park but it was found that owing to the amount of sewage entering this lake, it was necessary to abandon this plan in order to prevent the odor from becoming so strong that it would be impossible to use the park.

In some places, cisterns have been dug to collect the domestic wastes and are only cleaned as they overflow. This overflow finds its way to one of these branches by taking the most natural course and either seeping through the ground or flowing over it. One of the school houses has a cistern of this kind and from which there is almost a continual overflow into the street. When it reaches the street, it usually dries up before it has a chance to get to some of the storm sewers.

The sewer from the jail runs into a cesspool, which is located in a cell house and which overflows into one of the drains entering the lower branch. The odor from the cesspool is very noticeable and renders the cell house very unsanitary. In the alley between Main and Prince streets, opposite the court house, is a cesspool into which all the houses in this locality drain, and when this catch basin is not flushed out frequently, during the dry season, the odor coming from it is so strong that people cannot walk through the alley. One tenement house on the alley is never occupied on account of this odor.

The unsanitary conditions are fully realized by the citizens of Princeton, but the people who desire improvements have been unable to get the council to pass the necessary ordinance. There has been a strong agitation for a sanitary sewer system and sewage disposal system for a number of years. About \$1,800 has been spent in obtaining plans and the cost of a suitable system has been estimated to be \$70,000. The only reason that this system has not been installed is the expense that would be incurred, which would necessitate an increase in taxation. The citizens are very determined that such a system shall be installed and for this reason they

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have appealed to the State Board of Health for the enforcement of the Stream Pollution Law. Mr. E. B. Funk has gone so far in his determination to bring about the installing of this sewer system that he gained permission to connect a drain from his house into the Kidd hotel sewer, with the idea that a suit would be brought against him for maintaining a nuisance and that when it was determined that such was the case, it would necessitate the removal of all drains going into these branches. This action has not been taken, however, as he now feels that the Stream Pollution Law will remedy the situation at much less cost.

The situation at Princeton does not concern the pollution of the water supply, as the branches do not enter the Patoka River, but flow into the Wabash. The question at issue is rather one affecting the public health and comfort and for that reason can be remedied by the Stream Pollution Law in exactly the same manner as if the character of the water supply itself was affected. The merchants of the city and people who reside in the vicinity of either of these branches will gladly make affidavits in regard to the discomfort they experience because of the sewage which is discharged into the branches. They will also declare in an affidavit the necessity of keeping their houses closed, the strong odor arising from the sewage disposal along the streams and the facts as to the heaps of domestic sewage found at the mouth of the drains.

It is apparent that no laboratory investigations are necessary in this instance. The conditions are self-evident and if it becomes necessary to enforce the Stream Pollution Law to remedy the situation, the facts obtained from this survey and the testimony of the citizens of Princeton will be entirely sufficient evidence in showing the pollution of the water course.

The above report was considered and the following notice issued and ordered served upon the Board of Commissioners of Gibson County, the mayor of the city of Princeton and the Board of School Trustees of Princeton :

*To the Board of Commissioners of the County of Gibson, State of Indiana,
To the School Board of the City of Princeton, To the City of Princeton,
State of Indiana:*

You and each of you, are hereby notified that on the 24th day of April, 1909, the Board of Health of the city of Princeton, through A. L. Ziliak, secretary, filed with the undersigned, the State Board of Health of the State of Indiana, a complaint in writing in which the said Board of Health of the city of Princeton through A. L. Ziliak, secretary, alleged and charged that you, the board of commissioners of the County of Gibson, State of Indiana, the School Board of the city of Princeton, State of Indiana, the city of Princeton, State of Indiana, and each of you are discharging and permitting to be discharged sewage into a natural water course running through and into the said city of Princeton and is thereby injuring for domestic use the character of the water into which the same is discharged therein, to the injury of the public health of said city, which said written complaint was and is in the words and figures following to wit:

"UNITED STATES OF AMERICA, STATE OF INDIANA.

Before the State Board of Health.

The Board of Health of the City of Princeton v. City of Princeton, Board of Commissioners of the County of Gibson, School Board of the City of Princeton.

The plaintiff, Board of Health of the city of Princeton, complains of the above named defendants and says that the defendant city of Princeton is an incorporated city incorporated under the laws of the State of Indiana, and situate and being in Gibson county in said state; that each of said defendants is discharging and permitting to be discharged sewage into a natural course running through and into said city of Princeton and is thereby injuring for domestic use the character of the water into which the same is discharged therein, to the injury of the public health of said city.

Wherefore, plaintiff prays that the State Board of Health inquire into and investigate the conditions above mentioned and proceed further in the premises as provided by law.

A. L. ZILIAK, Secretary.

Princeton Board of Health."

You, and each of you, are hereby further notified that the State Board of Health, upon the filing of said complaint, investigated the conditions therein complained of and upon such investigation, the said State Board of Health of the State of Indiana found the conditions therein complained of and all of them to be true and that the condition produced by the discharge of said sewage into said natural water course is detrimental to the health and comfort of the public and that said discharge of such sewage is polluting the source of said water supply.

You and each of you are hereby notified to be and appear before the State Board of Health of the State of Indiana on the — day of July, 1909, in the office of the Secretary of the State Board of Health in the northwest corner of the State House in the City of Indianapolis, County of Marion and State of Indiana, at the corner of Ohio street and Senate avenue, at — o'clock — M. on said day and show cause, if any you or each of you may have, why an order of the State Board of Health of the State of Indiana, should not be entered against you to make such improvements or changes in the sewage system of the city of Princeton, as the Board shall deem necessary and such as will render the obnoxious matter now being passed into said natural water course innocuous and harmless, and show cause, if any you or each of you may have, why you will not purify said sewage before it enters said natural water course. That you and each of you also appear at the time and place above fixed in accordance with the terms and provisions of the act of the general assembly of the State of Indiana, being Chapter 24 of the acts of the general assembly of the State of Indiana for the year 1909, approved February 26, 1909, and found in the acts of the general assembly for 1909 on page 60 et seq., and then and there on the same day and at the said place to be present at such hearing at which your rights in the premises will be determined by the said Board, and to adduce any evidence in respect thereto that you may desire to lay

before the said Board and to be represented by your officers, agents or by counsel and to show cause, if any you or each of you may have, why the provisions of said law hereinbefore mentioned should not be enforced against you and also to present for the consideration of the Board, the time at which said order should in your judgment be made effective and all other matters involved in the premises.

In Witness Whereof, The State Board of Health of the State of Indiana, has hereunto set its hand and seal this — day of July, 1909.

By

POLLUTION OF FALL CREEK AT INDIANAPOLIS.

April 24, 1909.

State Board of Health, City:

Gentlemen—Please find enclosed copy of order and also complaint made by the Board of Commissioners of the County of Marion, formulated and based upon said order against the City of Indianapolis for discharging and permitting to be discharged sewage and deleterious matter into Fall Creek. This complaint was made after a hearing by the Board upon the petition filed by a large number of residents along said creek, and also after a personal examination of the conditions by the Board.

The Board is of the unanimous opinion that this matter should be investigated at once by your Board.

Very truly yours,

JOHN C. RUCKELSHAUS,
County Attorney.

State Board of Health:

Gentlemen—The Board of Commissioners of the County of Marion, State of Indiana, complain, allege and charge that the City of Indianapolis in the County of Marion, State of Indiana, is discharging and permitting to be discharged sewage, wastes, befouling and deleterious matter into Fall Creek; which said Fall Creek is a stream which runs through the County of Marion, and the corporate limits of the City of Indianapolis, and is thereby materially injuring for domestic use, the character of the water of said Fall Creek, in said City of Indianapolis, County of Marion, to the injury of public health and comfort, and by so doing is polluting the source of the public water supply.

Respectfully submitted,

JOHN M. MENDENHALL,
WM. H. ROBERTS,
CARL VON HAKE,

Board of Commissioners of the County of Marion.

INDIANAPOLIS, IND., April 24, 1909.

The Board of Commissioners of the County of Marion, State of Indiana, met pursuant to the adjournment of yesterday. Present: John Mendenhall, Wm. H. Roberts, Carl Von Hake; also Albert Sahm, Clerk of said Board. The meeting was called to order by John Mendenhall, Presi-

dent of the Board, whereupon the following matter was brought before the Board:

In the Matter of the Alleged Pollution of Fall Creek.

Comes now, George J. Marolt, et al., and present their petition in writing, showing that the waters of Fall Creek have been and are being polluted and materially injured for domestic use, to the injury of public health and comfort, and as a source of public water supply, by the discharge into said stream of sewage by means of and through the sewer system established, maintained and operated by the city of Indianapolis, and asking that the Board make complaint thereof to the State Board of Health in order that action may be taken to remedy such condition under the Act of the General Assembly of the State of Indiana, approved February 26th, 1909, entitled, "An Act concerning water for domestic use, providing for its protection from pollution and for its purification, to prevent the introduction of impurities into the public streams of the State, conferring certain powers upon the State Board of Health to enforce the provisions of this Act for the protection of the public health, and repealing certain laws," which petition is as follows, to wit:

And the Board having considered said petition, it is ordered that a complaint in writing by this Board be presented to the State Board of Health, charging that the city of Indianapolis has constructed and is maintaining and operating a system of sewers, and is now engaged in adding to such system by constructing additional sewers whereby it has heretofore discharged and is now discharging and will hereafter continue to discharge the sewage of said city, composed of befouling and deleterious matter into the waters of said Fall Creek, and thereby has materially injured for domestic use the character of the water of said stream to the injury of public health and comfort, and polluted the same as a source of public water supply, and is now so doing and will continue so to do, and thereby has produced a condition detrimental to public health and comfort, and to the comfort and health of persons residing in the vicinity of said stream, and asking that said State Board of Health inquire into said matter and take such further proceedings to remedy such condition as is authorized by the Act of the general assembly, above mentioned, and the Attorney of the Board is directed to prepare and file such complaint.

INDIANAPOLIS, IND., June 25, 1909.

The State Board of Health, Indianapolis, Indiana:

Gentlemen—On April 24th, 1909, the Board received from John C. Ruckelshaus, county attorney, a copy of an order issued against the city of Indianapolis, based upon the complaint made by the Board of Commissioners of the county of Marion that the city of Indianapolis was discharging and permitting to be discharged sewage and deleterious matter into Fall Creek. Pursuant to instructions a sanitary survey of Fall Creek and the sewer system of the city of Indianapolis discharging into the Creek, has been made. The report which is attached hereto covers in detail the condition of the sewer system which, as alleged, is discharging sewage and deleterious matter into Fall Creek, and seems to establish the fact that the pollution of Fall Creek brings material injury for domestic use

and to the injury of public health and comfort. The trouble seems to be due to certain faults in the construction and operation of the sewer system. It also appears that when these faults have been remedied, further pollution of Fall Creek to such an extent that the water therein will become foul and obnoxious, will be impossible.

It would seem proper that the Board issue an order covering the following points against the city of Indianapolis:

1. That the outlet of the New Jersey street sewer be cleaned from dirt.
2. That the entrances to the interceptors be cleaned and all plugs removed.
3. That the portion of the Fall Creek interceptors which are laid in bed of Fall Creek and which are in need of repair, be put in good condition.
4. That the outlets to the sewers now emptying on the banks of Fall Creek be extended to reach the water flow at low water mark.
5. That gratings be placed over the mouths of open sewers emptying into Fall Creek.

It would further seem proper that, in compliance with Chapter 24 of the Acts of 1909, the Mayor of the city of Indianapolis, the city attorney and the president of the city council be notified of the appointment of a hearing at which time they may be present to consider the issuance of an order by the State Board of Health and the time in which such an order should be made effective.

REPORT UPON THE INDIANAPOLIS SEWER SYSTEM OVERFLOWING INTO FALL CREEK.

J. H. BREWSTER.

The sewage of the city of Indianapolis is carried off by what is known as "The combined system" of sewers in which both the sanitary sewage and the storm water flow through the same sewers. The sewers in nearly every section of the city have at their outlets an intercepting sewer which is laid below the grade of the street sewer through which the sewage is diverted and carried to White River. This system is used exclusively in all sections of the city where the overflow or storm water enters Fall Creek. These interceptors are so designed that during dry weather or ordinary rains, no sewage enters Fall Creek, but during periods of heavy downpour when the interceptors will not take care of all the storm water the surplus overflows and runs into Fall Creek, carrying with it a portion of the so-called sanitary sewage."

The intercepting sewer system along Fall Creek includes the Fall Creek Interceptor, the Twenty-second street Interceptor, and the Brightwood Interceptor, all of which empty into White River Interceptor, through which the sewage is carried to White River. These interceptors are ordinary sewers running at right angles to the system of sewers with a direct connection at the point where the street sewers pass over them. The street sewers have a dam constructed in them on the side of the outlet into the Interceptor be-

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tween the interceptor and the creek. This dam, which is made of concrete, is built high enough to stop all of the sewage that the interceptor is capable of taking care of and in this way keeps it from flowing out of the mouths of the street sewers into Fall Creek until by reason of heavy storms, the amount of sewage coming through the sewer is so great that the interceptors are not capable of taking care of it. At this time the sewage which is greatly diluted, overflows the dam and enters the creek. In other portions of the city where the sewers overflow, they either flow into Pleasant Run or into Pogue's Run in the same manner. The sewers that drain into the Fall Creek interceptor, and which overflow into Fall Creek are the North Indianapolis sewer, Northwestern street sewer, Senate avenue sewer, Capitol avenue sewer, Illinois street sewer, Meridian street sewer, Pennsylvania street sewer, Talbot avenue sewer, Delaware street sewer, Washington boulevard sewer, New Jersey street sewer, Central avenue sewer and the College avenue sewer. The College avenue sewer is now under construction and will also overflow into Fall Creek. These sewers all empty into the Fall Creek interceptor which runs directly into the White River interceptor. The Brightwood sewer, which is now under construction, has an interceptor of its own, which drains direct into the White River interceptor. It is the impression of many of the citizens along Fall Creek that the immense overflow sewer that empties into Fall Creek at Thirtieth street, is designed to carry all the sewage from the Brightwood district direct into Fall Creek. This, however, is not so, as the sewage is to be intercepted and only the overflow or storm water allowed to enter the creek. The sewer at Twenty-second street and Senate avenue, which is known as the "Old State Ditch" also overflows into Fall Creek. This sewer has an interceptor of its own which runs directly into the White River interceptor. These sewers comprise the drainage system for the section of the city shown on the accompanying map and receive the sanitary sewage of about 68,000 people or about one-quarter of the entire population of the city and the only sewers which have any connection with Fall Creek.

The Fall Creek interceptor which receives the sewage from that section of the city shown on the accompanying map as the Fall Creek district, which comprises 2,959 acres of land and has a population of about 20,000, is a two-foot circular sewer which has a grade of two-tenths of a foot per 100 feet and is capable of carrying 6,500,000 gallons of sewage in twenty-four hours. If running at full capacity all the time it will take care of the sewage of 80,000 people, figuring 80 gallons per capita per day. The sewage passing through it at the present time amounts to 1,600,000 gallons per day, thus leaving a capacity for storm water of 4,900,000 gallons per day or 204,166 gallons an hour.

The Brightwood interceptor, which takes care of that part of the city shown on the accompanying map as "Brightwood District," comprising 1.885 acres of land and having a population of about 8,000, is two feet six inches in diameter, with a grade of eight hundredths of a foot per 100 feet and is capable of carrying 7,800,000 gallons in twenty-four hours, or if running at its complete capacity all of the time it will take care of the sanitary sewage of 95,000 people, figured as above.

The Twenty-second street interceptor, which receives the sewage from that section of the city shown on the accompanying map as the "Twenty-

second Street District," or the district drained by the Old State Ditch, which runs from the Atlas Engine Works to Senate avenue, is three feet in diameter. The district comprises 1,156 acres of land and has a population of 40,000. The interceptor is a three-foot circular sewer with a grade of ten hundredths of a foot per 100 feet and is capable of carrying 25,000,000 gallons per day or the sanitary sewage of 310,000 people. The amount of sewage passing through it at the present time is 3,200,000 gallons per day which leaves a capacity capable of carrying off 21,800,000 gallons of storm water per day, or 908,303 gallons in one hour.

These intercepting sewers empty into the White River interceptor which is capable of carrying, if running its full capacity 50,000,000 gallons per day, or the sewage of 625,000 people, or 10,000,000 gallons more than the three interceptors are capable of emptying into it. The sewage that it is required to carry amounts at the present time to 5,440,000 gallons in twenty-four hours. This leaves a capacity of 44,800,000 gallons to be filled with storm water before the sewers overflow into Fall Creek, but as the interceptors are only capable of emptying 40,000,000 of sewage into White River interceptor, the amount of storm water that is being carried when the sewers overflow is 34,560,000 gallons.

On April 27, 1900, we in company with Mr. Blaine Miller, city engineer, made an inspection of all the sewers emptying into Fall Creek. Forty-six hundredths inches of rain had fallen the previous night and on the morning of the 27th, but it had ceased just previous to the investigation which was made in the afternoon. We visited all the sewers' outlets, going into them when it was possible, until the intercepting sewer was reached. Some of these sewers have submerged outlets and it is impossible to enter them, but by the character and flow of the water around the outlets it could be easily ascertained whether or not any sewage was discharging from them into the creek.

The Old State Ditch or the Twenty-second street sewer is a twelve-foot four-inch semicircular sewer with a grade of 10 hundredths of a foot per 100 feet. The interceptor is about 100 yards from the mouth of the sewer. No sewage was flowing from this sewer and the interceptor was only running about one-tenth full. The sewer was clean and had no odor coming from it.

The North Indianapolis and the Northwestern street sewers have their outlets together and enter Fall Creek between Northwestern avenue and the aqueduct of the Indianapolis Water Company. The North Indianapolis street sewer is a seven- by eight-foot semi-circular sewer with a grade of six hundredths of a foot per 100 feet. It was perfectly clean and no odor was coming from it. The bottom of the sewer was moist, due evidently to some flow into Fall Creek during the previous rains, although there was nothing entering the creek at the time of this inspection.

The Northwestern sewer is a five-foot by ten-foot semi-circular sewer with a grade of 0.135 feet per 100 feet. Some sewage was flowing through it into Fall Creek and it also had some odor coming from it. Upon investigation at the manhole where the sewer enters the interceptor, it was found that the mouth of the interceptor had been clogged by dirt and wood and that there was an old pail resting in it which backed up the sewage that came down through the sewer to such an extent that it was allowed to flow

over the concrete dam and thus enter Fall Creek. This condition can easily be remedied by cleaning out the mouth of the interceptor, which will allow the sewage to enter the interceptor instead of running into Fall Creek.

The Senate avenue sewer is a six-foot circular sewer with a grade of sixteen hundredths of a foot per 100 feet. There was no sewage coming from it and absolutely no odor. The mouth of the interceptor at this point was somewhat plugged up by dirt but not to a sufficient extent to cause sewage to overflow the dam into the creek.

The Capitol avenue sewer which is five feet by three feet four inches in diameter with a grade of ten hundredths of a foot per 100 feet. This sewer had no sewage coming from it and no odor. The mouth of this sewer is in a very bad position as it is located some distance from the water when Fall Creek is at its normal flow. Consequently when this sewer is discharging sewage into Fall Creek it has to flow over the ground for some distance before it reaches the creek. In this way it collects in pools and becomes stagnant and gives off an offensive odor. There was a strong odor at the mouth of this sewer which at the time of this investigation was coming from this decomposing sewage and not from the sewer direct.

The Meridian street sewer which is a four-foot nine-inch circular sewer with a grade of ten hundredths of a foot per 100 feet, had no sewage coming from it but a slight odor was noted which was due to the sanitary sewage that had been flowing into Fall Creek. The mouth of the interceptor had been stopped up with dirt and stones which absolutely prevented any sewage from entering the interceptor. This dirt and waste had been removed from the mouth of the interceptor but a few minutes before our arrival at which time the sewage was being carried off very nicely through the intercepting sewer. The mouth of this sewer is also some distance from the flow of Fall Creek. The Meridian street sewer and the Illinois street sewer should be so extended that sewage coming from them would run into the flow of Fall Creek instead of being emptied upon its banks.

The Pennsylvania street sewer is a three-foot three-inch by six-foot six-inch semi-circular sewer with a grade of ten hundredths of a foot per 100 feet. This sewer had considerable sewage coming from it and emitted a strong odor. The sewer was in a very bad condition and a very large amount of dirt was collected near its mouth. The manhole was entirely plugged up so that the sewage coming could not get into the interceptor and was obliged to overflow into Fall Creek. ●

Upon investigation it was found that the plug that had been placed in the mouth of the interceptor during the time of the construction of this sewer had never been removed and for the last year and a half all the sewage coming through this sewer had been running directly into Fall Creek thus producing some of the odor that has been complained of in this vicinity. By the removal of this plug the sewage will be cared for in the same way as in the case of the other sewers.

The Talbot avenue sewer which is a twenty-inch pipe sewer with a grade of twenty hundredths of a foot per 100 feet has a submerged outlet into Fall Creek and for this reason it was impossible to get into it and there was no sewage coming from it and no odor to be observed.

The Delaware street sewer is a three-foot by three-foot six-inch semi-circular sewer with a grade of ten hundredths of a foot per 100 feet. There was no sewage coming from it and it produced no odor. The mouth of this sewer is also submerged.

The New Jersey street sewer which is a three-foot by three-foot six-inch semi-circular sewer with a grade of ten hundredths of a foot per 100 feet, was entirely stopped up by dirt and for this reason it was impossible for any sewage or any storm flow to enter Fall Creek and consequently there was no odor coming from it.

The Central avenue sewer is four feet by three feet. There was no sewage coming from it and no odor could be detected. The mouth of this sewer is a few feet above the water level of the creek, and is some distance from the normal water flow. Although there is no odor around the mouth of this sewer at the present time, yet an extension similar to those of the other sewers to take the overflow coming from it to the current of the creek is highly desirable and would remove any possibility of odor caused by the stagnation of the sewage along the banks of the creek.

The College avenue sewer which is now under construction is a six-foot circular sewer with a grade of two hundredths of a foot per 100 feet. Practically no sewage enters Fall Creek from it as there are very few buildings connected at the present time and the flow is principally water that is pumped from the sewer pits in order to keep them free from water during the construction. It is not connected as yet with the interceptor and for this reason any sewage that does come through this sewer enters Fall Creek, but only after being greatly diluted by the water that is pumped from the manholes. This sewer which now has a plug in the mouth of the interceptor will eventually discharge into the Fall Creek interceptor in the same manner as the others.

The unsanitary conditions that were found in these sewers are all of a very minor character and can be remedied without difficulty or great expense. The principal trouble and the one which is the cause of the complaint throughout this district is that the interceptor itself is in a very bad condition. At Senate avenue it is badly plugged up with dirt and carries an abnormally large flow of water due to a break in the interceptor between Capitol avenue and Senate avenue which allows a large quantity of the creek water to flow into it and this condition greatly reduces the amount of storm flow that it is capable of carrying and causes the sewers emptying sewage into this interceptor to overflow into Fall Creek at times when both sanitary sewage and storm flow should be easily cared for by the interceptors. The interceptor is in a very bad condition for two or three blocks through the section between Senate avenue and Meridian street. It was originally placed under ground on the banks of the creek but as the water has worn the banks away it now runs through the banks of the creek. In many places the ground upon which this sewer is laid has been washed out and the interceptor has settled forming several pockets along the line which entirely break the natural grade and cause the water in many places to flow up hill. Where this interceptor has settled the joints of tile pipe have been loosened allowing the creek water to flow into the interceptor when the creek water is over it, but when the creek is exceptionally low and the interceptor is not submerged, these loose joints

permit the sewage to run out on the land thus causing the odor in this section. It was also found that the manhole from the interceptor from Illinois and Meridian streets was badly plugged up, and the sewage which collected at this place gave off some odor.

The sewage carried by this system is the ordinary type of domestic waste and street washings, and its entrance into Fall Creek should be prevented in every possible way. During periods of heavy storm when the interceptors are not capable of taking care of the total amount of sewage carried by the street sewers the flow of Fall Creek is greatly increased and carries a large amount of sewage coming from the land drainage and road washings from all parts of the country through which Fall Creek runs. The sanitary sewage, which has already been greatly diluted from the storm flow that it has received from the city, is diluted to a much greater extent after reaching Fall Creek. After heavy rains and when the sewer system is overflowing, bacterial count of the water of Fall Creek is undoubtedly extremely high, but this condition cannot be attributed wholly to the sewage that Indianapolis is putting into it, for in all rivers after periods of rain and when they are at flood stage the water is muddy and the bacterial count is materially increased by the washings from the drainage area. If all the sewage from Indianapolis that is now entering Fall Creek could be diverted in another direction, the bacterial count of the water during storm periods would still be very high.

To properly dispose of the sewage entering Fall Creek, the problem should be worked out in such a way that it can be applied to a disposal system for the whole city. If extensive alterations of the present systems are necessary, it is quite likely that in the near future the cities located on the White River below the points where the Indianapolis sewage enters the river, will ask the city of Indianapolis to stop its gross pollution of the river, and it would manifestly be a useless expenditure of money to install an elaborate system of sewage disposal for this one section of the city only to be obliged to change it later on.

If it is desired to keep all sanitary sewage out of White River, in planning a sewage system for the city of Indianapolis, it would be necessary to devise some way by which it may be kept out of Fall Creek, Pleasant Run and Pogue's Run as all enter the river and must receive equal consideration. Such a disposition of the sewage would require the installation of an entirely new sewer system in addition to the present system throughout the whole city in order to separate the sanitary sewage from the storm flow. This would in many cases require the laying of a double system—one to take care of one side of the street and one to take care of the other—for, owing to the size of the present sewers and the very light grade in the city, it would be impossible to run either sewers over or under the present sewers. It is hardly possible to install a sewage disposal system of septic tanks and filter beds to care for both sanitary sewage and storm water during periods of heavy rain. At such times it would be necessary to bypass the storm flow and allow it to run directly into White River carrying with it the sanitary sewage from the whole city. If this must be done there is no reason why the sewers overflowing into Fall Creek should not be allowed to do the same thing and if it is not to be allowed, it seems advisable to wait until the problem as a whole is taken

up and at that time design a system that will take care of the sewage in a more economical way than by simply taking care of Fall Creek district with no knowledge of what will be necessary later.

On May 29, 1909, there was a precipitation of fifty-eight hundredths of an inch of water in one and one-half hours. This is considered by W. T. Blythe, section director of the Weather Bureau at Indianapolis to be a heavy rain. He also stated that the ground was very well soaked with water by the rains of the previous day which caused most of this rain to be carried off through the sewers. During this time the sewers along Fall Creek had a slight overflow. This rain also caused the Twenty-second street sewer to overflow to a depth of about one and one-half feet. This shows conclusively that a rain must fall at the rate of about one-half inch in an hour and a half to cause the sewers to overflow into Fall Creek. It is thus seen that the system, even in its present bad condition, is capable of caring for a heavy rain and when it is repaired it will be able to take care of a greater amount of sewage than it does at the present time.

If the system is properly repaired and cleaned so that it can do the work that it is designed to do, there will be no further trouble from odors along Fall Creek, and with this idea in view I beg to make the following recommendations:

(1) That the outlet of the New Jersey street sewer be cleaned out so that the sewage may flow into Fall Creek thus preventing any possibility of the sewage backing up into the street.

(2) That the inlets to the interceptors be cleaned and all plugs removed.

(3) That the portions of the Fall Creek interceptors which are laid on the bed of Fall Creek and are in need of repair, be properly repaired.

(4) That the outlets to sewers now emptying on the banks of Fall Creek instead of in the water flow, be so extended that all possibility of stagnation will be removed.

(5) That proper gratings be put over the mouth of open sewers in order to prevent children from entering and plugging up the mouth of the interceptors.

When these changes and improvements are made the interceptor will care for a larger amount of storm flow than it does at the present time, and no sanitary sewage will enter Fall Creek except when greatly diluted by storm flow.

The above matter all pertaining to the pollution of Fall Creek at Indianapolis, was fully considered and the following order was issued:

To the City of Indianapolis, Ind.:

You are hereby notified that on the 24th day of April, 1909, the Board of Commissioners of the County of Marion and State of Indiana, filed with the undersigned, the State Board of Health, of the State of Indiana, a complaint in writing in which the said Board of Commissioners of Marion county alleged and charged that you, the said city of Indianapolis, are discharging and permitting to be discharged, sewage, waste, befouled and de-

leterious matter into Fall Creek, which Fall Creek is a stream which runs through the county of Marion and the corporate limits of the city of Indianapolis in said county and State, and is thereby materially injuring for domestic use the character of the water in said Fall Creek, to the injury of the public health and comfort and by so doing, is polluting the source of the public water supply of the city of Indianapolis, which said written complaint was and is in the words and figures following, to wit :

"State Board of Health:

Gentlemen—The Board of Commissioners of the County of Marion, State of Indiana, complain, allege and charge that the city of Indianapolis in the county of Marion, State of Indiana, is discharging and permitting to be discharged sewage, wastes, befouling and deleterious matter into Fall Creek ; which said Fall Creek is a stream which runs through the county of Marion and the corporate limits of the city of Indianapolis, and is thereby materially injuring for domestic use, the character of the water of said Fall Creek in said city of Indianapolis, county of Marion, to the injury of public health and comfort, and by so doing is polluting the source of the public water supply.

Respectfully submitted,

JOHN M. MENDENHALL,
WM. H. ROBERTS,
CARL VON HAKE,

Board of Commissioners of the County of Marion."

You are hereby further notified that the State Board of Health, upon the filing of said complaint, investigated the conditions therein complained of and upon such investigation the said State Board of Health of the State of Indiana, found the conditions therein complained of and all of them to be true and that the condition produced by the discharge of said sewage, wastes and befouling and deleterious matter into Fall Creek is detrimental to the public health and comfort and to the comfort and health of persons residing in the vicinity of said Fall Creek in Marion county, State of Indiana, and that said discharge of such matter is polluting the source of said water supply.

You are hereby notified to be and appear before the State Board of Health of the State of Indiana, on the 9th day of July, 1909, in the office of the secretary of the State Board of Health in the northwest corner of the State House in the city of Indianapolis, county of Marion, and State of Indiana, at the corner of Ohio street and Senate avenue, at 2 o'clock p. m. on said day and show cause, if any you may have, why an order of the State Board of Health of the State of Indiana, should not be entered against you to make such improvements or changes in the sewage system of the city of Indianapolis, as the Board shall deem necessary and such as will render the obnoxious matter now being passed into Fall Creek innocuous and harmless, and show cause, if any you may have, why you will not purify said sewage, wastes and befouling and deleterious matter before it enters Fall Creek. That you also appear at the time and place above fixed in accordance with the terms and provisions of the Act of the general assembly of the State of Indiana being Chapter 24 of the Acts of

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the general assembly of the State of Indiana, for the year 1909, approved February 26, 1909, and found in the Acts of the general assembly for 1909, on page 60 et seq., and then and there on the same day and at said place to be present at such hearing at which your rights in the premises will be determined by the said Board, and to adduce any evidence in respect thereto that you may desire to lay before the said Board, and to be represented by your officers, agents or by counsel, and to show cause, if any you may have, why the provisions of said law hereinbefore mentioned, should not be enforced against you, and also to present for the consideration of the Board the time at which said order should in your judgment be made effective, and all other matters involved in the premises.

In Witness Whereof, The State Board of Health of the State of Indiana, has hereunto set its hand and seal this 7th day of July, 1909.

The above order was ordered to be served upon the Mayor, the president of the city council, and corporation counsel of Indianapolis.

REGULAR QUARTERLY MEETING OF THE STATE BOARD OF HEALTH.

July 9, 1909.

Called to order 2 p. m. by President McCoy.

Present: McCoy, Wishard, Tucker, Hurty.

The President announced: "This meeting is to consider and take action concerning the affairs of the third fiscal quarter and the second calendar quarter, both ending June 30, 1909."

Minutes of the last regular meeting held April 9, 1909, and the special meeting held June 25, 1909, read and approved in each special item and as a whole.

REPORT OF SECRETARY FOR QUARTER ENDING JUNE 30, 1909.

All orders ordered by the Board at the last regular and at the special meeting have been fulfilled, with the exception of notifying Princeton concerning the unsanitary drainage conditions. This city was not notified because the form of notification was not right when first prepared in the Attorney-General's office, and had to undergo revision. This caused delay and the document was not received in time to send to the Princeton authorities, so they could attend the present meeting. The vital statistics have been collected as usual, and I think the accuracy of said statistics is better than

heretofore. It seems well to mention here that despite all our letter writing, and efforts with physicians, there seems to be little improvement in the way of definite and exact terms as causes of death. It is only through eternal vigilance and writing a great number of letters that a full measure of accuracy is secured.

VISITS.

The Secretary made 18 visits during the quarter. In all, 32 petitions were received for visits, but only 18 were answered in person. The visits were made as follows:

April 6, Bloomington and Helmsburg, on account of unsanitary schoolhouse at Helmsburg, on account of lecture at Bloomington, and conference with Bloomington health officer in regard to local sanitary conditions.

April 12, Auburn, on account of public lecture upon tuberculosis, and to confer upon sanitary conditions with local authorities.

April 15, Frankfort, on account of popular lecture on tuberculosis in conjunction with exhibit.

April 19, Gary, on account of popular lecture on tuberculosis, and to consult with local authorities upon sanitary matters.

April 26, Greenfield, on account of inspection of schoolhouse and conference with school trustees.

April 28, Fairmount, on account of popular lecture on tuberculosis.

April 30, Anderson, on account of public lecture on tuberculosis.

May 12, Bloomington, on account of lecture to students and visit to Ellettsville.

May 13, Orleans, on account of inspection of schoolhouse.

May 15, Gwynneville, on account of inspection of schoolhouse.

May 26, Straughn, on account of schoolhouse affairs.

May 27, Terre Haute, on account of tuberculosis exhibit being there and to deliver four public lectures.

May 31 to June 12, Washington and Atlantic City. To Washington on account of conference of State and Provincial Boards of Health, and on account of conference of officials of State Boards of Health with Surgeon-General Wyman. Atlantic City on account of attendance at Section on Hygiene and Sanitary Science of the American Medical Association.

June 16, Rockville, on account of breaking ground for State Tuberculosis Hospital.

June 19, Franklin, on account of schoolhouse muddle at Trafalgar, and to inspect schoolhouse at Slacks, Indiana.

June 21, Bloomington and French Lick. To Bloomington on account of lecture before students upon the subject of vital statistics.

June 21, to French Lick on account of meeting of State Pharmaceutical Association, to read a paper and explain the relations of the State Board to said association.

June 24, Lafayette, to address the Municipal League of Indiana. Full written reports of these visits are appended.

Bloomington and Helmsburg.—April 6. On arrival at Helmsburg, where I was to meet the trustee and visit a distant schoolhouse, the rain was coming down in torrents. The trustee was not present and nothing could be done except to stay in the station and wait for the next train, the rain descending all day. At Bloomington I consulted with the local health officer, Dr. Fletcher Gardner, in regard to the pollution of a creek which runs through the town, by the gas company. Also consulted and advised with the local authorities in regard to the new sewer system being constructed. Also delivered a lecture upon Vital Statistics before the students of the university.

Auburn.—April 12. Upon arriving at Auburn, I first met the Board of School Trustees of Churubusco, who came by arrangement from their town in Noble County to consult with me in regard to their schoolhouse. They were accompanied by their architect, who brought the plans for the building. The plans were carefully reviewed and two corrections made, and were finally accepted. I then met with the county and city health officers and made inspection of one schoolhouse, suggesting two improvements. I also made some sanitary inspections of alleys and advised in regard to the disposal of garbage. In the evening I delivered an illustrated lecture upon the "Prevention and Cure of Tuberculosis" before a popular audience, under the auspices of the Woman's Civic Club.

Frankfort.—April 15. At Frankfort, under the auspices of the local physicians' club, I delivered a popular lecture upon "The Prevention and Cure of Tuberculosis." The church was full and overflowing, and after the lecture, the audience passed a unanimous resolution of thanks, and also passed a resolution of confidence in the State Board of Health.

Gary.—April 19. At Gary I inspected the town and its sanitary arrangements with the health officer, Dr. Theo. B. Templin

Afterwards I consulted with the city officials and also with the school board. In the afternoon I read a paper entitled "The Future Hygiene" before the County Medical Society, and in the evening delivered a popular illustrated address upon "The Prevention and Cure of Tuberculosis." This new city will finally be almost hygiene perfect. It is provided with a comprehensive and excellent system of sewers, and most of its streets are already well paved. I say already because in March, 1906, three years prior, there was not a building upon the present site of Gary. The houses are all well constructed and the United States Steel Corporation which owns the great majority of the ground, and has control, will not permit the construction of shanties or cheap business buildings or dwellings, nor are unhygienic conditions tolerated. At the present time Gary is constructing what I think to be the most perfect schoolhouse in the State. There is not a sanitary requirement missing, and the convenience, ingenuity and beauty of the building is something to be greatly admired. I believe my visit to Gary was attended with extra good results.

Greenfield.—April 26. The report of this visit has already been made in detail, and will be found in the minutes of the Special Meeting, June 25. No action of the Board was necessary because the school board readily adopted and will put into effect all the suggestions made.

Fairmount.—April 28. Upon invitation of the local physicians and local authorities of Fairmount, I visited the place in order to deliver an illustrated lecture upon "The Prevention and Cure of Consumption." We had our exhibit on display there for two days, and the night of the lecture. The church room was crowded to overflowing. A resolution of thanks was offered by the audience and commendation for the work of the State Board of Health.

Anderson.—April 30. This visit was made for the purpose of delivering an illustrated lecture upon the "Prevention and Cure of Tuberculosis," before a popular audience. Some of the local physicians, but not the local society, were instrumental in arranging for this public occasion. A large audience was present, and the lecture was well received.

Ellettsville.—May 12. This visit was made at the same time I visited Bloomington on May 12. Ellettsville is about four miles northwest of Bloomington, and it was necessary to ride overland in order to reach the town or else lose a great deal of time waiting for trains. At Ellettsville I visited the schoolhouse in obedience to

petition from patrons. The report of this visit in full was presented at the last Special Meeting of the Board, and acted upon, so need not be repeated here.

Bloomington.—May 12. This visit was made to deliver a lecture upon "Hygiene" before the students of the university, and to visit Ellettsville and inspect the schoolhouse as already set forth; also to visit the schoolhouse at Orleans. The lecture was one of the series of three delivered during the winter.

Orleans.—May 13. This visit was made on account of petition of school trustees because of a former condemnation of the schoolhouse. Upon arrival I met with Mr. Edward Hise, president, and the other two members. The whole situation was considered. It was made plain that money did not exist and could not be procured in that district in sufficient amount to build a schoolhouse of desired size. As the law cannot require impossibilities, the trustees were told there was probably no need of action on the part of the State Board of Health to extend condemnation a year. However, I suggest that, as a matter of form, said condemnation be extended. Assurance is given by the trustees that a new schoolhouse will be erected next year and they promised that extra attention will be given to hygiene this winter in the way of instructing the pupils, and having them perform certain exercises to neutralize the ill effects of the school surroundings as far as possible.

Gwynneville.—May 15. This trip was made in order to inspect the Gwynneville schoolhouse. The report of same has already been made and acted upon and will be found in the minutes of the last special meeting.

Straughn.—May 26. My visit to Straughn was made because of the urgent invitation of citizens to try and help settle a quarrel concerning the location of the new schoolhouse. The old schoolhouse had burned down early in the spring, and the rules of the State Board had been served upon the trustee. He desired to construct the new schoolhouse on the old site, but it was objected to on the ground that the site did not comply with the rules. However, examination shows that the site did comply with the rules, and therefore the question was settled to have the new building constructed upon the old site.

Terre Haute.—May 27. The object of this visit was to show the tuberculosis exhibit and to deliver four public lectures upon tuberculosis and its prevention. Two of these lectures were illustrated.

One was delivered before the assembled high school and grammar students, and one before the class at the State Normal School.

Washington and Atlantic City.—May 31. The visit to Washington was made under order of the Board to attend the Conference of State and Provincial Boards of Health of North America, and to attend the Conference of the State Boards of Health with the Surgeon-General of the Marine Hospital Service. These two conferences occupied four days. All the subjects as laid down in the program were thoroughly discussed. As reports of these conferences will be printed it seems unnecessary to give in detail, or even in abstract, what was done. It probably will suffice to say both meetings were most profitable in every way. At Atlantic City, I attended the five day session of the section on hygiene and sanitary science. The entire program was completely fulfilled. Not a paper was missed. The meeting was very profitable, and as the proceedings will be printed in pamphlet form, I will not here give an abstract. Your Secretary had the honor of being elected chairman of this section for the ensuing year.

Rockville.—June 16. The visit to Rockville was to advise with the State Tuberculosis Commission in regard to features of the State Tuberculosis Hospital, also to be present at the breaking of the ground for the new building. On the afternoon of June 16 a large crowd had gathered upon the grounds about four miles east of Rockville. The contractor and men were at hand, and a plow and horses provided. I had the honor to hold the plow handles when the first earth was broken for the hospital and made a brief talk upon the importance of the hospital and its significance.

Trafalgar.—June 19. At the earnest solicitation of Dr. Oran Province, health officer of Johnson County, I joined him in a visit to the town of Trafalgar. The State Board had condemned the Trafalgar schoolhouse, and there was a warm discussion between factions as to the location of the new building. One faction did not desire to erect the new building upon the old site, claiming that it was illegal. Upon arriving at Trafalgar, we were met by some of the citizens, and by a very brief inspection, the site was discovered to be illegal. It was low, damp, could not be drained and was within three hundred feet of the railroad. Our decision was given and the trustee said he would not construct the new schoolhouse on the old site.

Slacks.—Passing on from Trafalgar, we inspected the Slacks schoolhouse. We found it to be a miserable old wooden structure,

off from the road and down a muddy lane. Great cracks existed in the walls and in the floor. There are no outhouses and the schoolhouse in every particular is unsanitary and unfit for school purposes. There was not a good feature about the schoolhouse except the stove, and as all plain heating stoves are forbidden in the rules, that was an illegal condition. The trustee has promised to transport these school children from this schoolhouse and to close it up. It, therefore, seems unnecessary for the Board to take action.

French Lick and Bloomington.—June 21. On this date I visited French Lick to attend the annual meeting of the Indiana State Pharmaceutical Association. The members of this society requested representation from the State Board because of certain frictions which have existed on account of the enforcement of the pure food and drug law. I also consented to read a paper before the said society. Mr. Barnard also attended the meeting because in our judgment the conditions were such as to demand the attendance of both of us. Mr. Barnard addressed the society upon the experiments conducted in the laboratory showing that syrups and crushed fruits could be kept for a reasonable period sound and sweet without the use of antiseptics. There was much discussion on account of the friction which has existed, but we now believe that the discussions are well settled and that conditions have been smoothed over. From French Lick I went to Bloomington, which is on the way home, to give my last lecture on hygiene and to attend the commencement of the medical department.

Lafayette.—June 24. On this date I visited Lafayette to attend the annual meeting of the Municipal League of Indiana. This league is composed of mayors, councilmen and attorneys of the various cities and towns of the State. My object in attending was to make a talk upon the hygiene and sanitation of cities and towns. When I spoke there probably were one hundred municipal officers present. I made a plea for better sanitation, entering into particulars how it was possible to make the public health better everywhere. I laid particular stress upon the disposal of sewage and garbage and the banishment of flies. The address was well received and a resolution of thanks was passed. In the discussion several speakers were convinced that the important phase of municipal government was sanitation. I distributed copies of the prepared fly ordinance, and since the meeting, we have received letters from several cities and towns stating that the ordinance has been passed and will be enforced.

CONTAGIOUS DISEASES.

The following tables show the smallpox and typhoid fever status for the quarter:

SMALLPOX COMPARISON FOR SECOND QUARTER, 1909.

	No. Cases Reported.	No. Deaths.	No. Counties Invaded.
April, 1908.....	324	2	35
April, 1909.....	74	1	18
May, 1908.....	275	0	33
May, 1909.....	88	1	13
June, 1908.....	97	3	21
June, 1909.....	103	0	41
Total, 1908.....	696	5	89
Total, 1909.....	265	2	72

TYPHOID FEVER COMPARISON FOR SECOND QUARTER, 1909.

	Number Cases Reported.	Number Deaths.	Number Counties Invaded.
April, 1908.....	198	35	36
April, 1909.....	58	33	24
May, 1908.....	91	27	26
May, 1909.....	80	35	22
June 1908.....	127	27	45
June, 1909.....	125	34	27
Total, 1908.....	416	89	107
Total, 1909.....	263	102	73

SCHOOLS NOS. 11, 12 AND 13, MARION TOWNSHIP, BOONE COUNTY.

Mr. Chas. C. Howard, Trustee of Marion Township, Boone County, accompanied by his attorney, Hon. S. R. Artman, appeared before the Board and represented as follows:

The State Board of Health regularly condemned the school-houses known as Nos. 11, 12 and 13, in Marion Township, two years ago, and then extended the condemnation under certain conditions to June, 1909. An honest effort has been made by the trustee to build a modern structure for a consolidated school and he has been estopped by an injunction of the Boone County Court, because of disputes among citizens as to the legality of the acts of the trustee and because of local disputes concerning the site.

For this reason the mandate making it impossible for the trustee to build, a second extension is requested to June 1, 1910, by which time it is hoped all obstructions will be removed, and if they are, the trustee will construct a modern building.

After argument by Attorney Artman, and after consideration of the matter it was

Ordered, That the condemnations of the schoolhouses known as Districts Nos. 11, 12 and 13, in Marion Township, Boone County, are repealed and nullified.

INDIANAPOLIS SEWER MATTER.

Mayor Bookwalter, of Indianapolis, appeared in obedience to summons duly issued, to answer why the State Board should not issue an order against the city, ordering improvements and changes as set forth in the previous minutes to prevent the pollution of Fall Creek.

Mayor Bookwalter announced that most of the improvements which the State Board contemplated ordering, as set forth in summons to appear, had already been made and the remainder would be completed as soon as the work could be done.

The Mayor's statement was accepted and it was

Ordered, That the matter be dropped and the intended orders of the Board, as set forth in previous minutes, be considered as fulfilled.

MEETING OF THE ASSOCIATION OF STATE AND NATIONAL FOOD AND DAIRY DEPARTMENTS.

The annual meeting of the above named association was announced to occur at Denver, Colorado, Aug. 24th to 27th, inclusive, and the matter of sending delegates to represent the Board was discussed and it was finally

Ordered, That the President, Dr. Geo. T. McCoy, and Mr. H. E. Barnard, Food and Drug Chemist, should represent the Board and that their expense should be paid from the laboratory fund. And it was further

Ordered. If Dr. McCoy should find he could not go he should have power to designate some member of the Board as alternate.

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REPORT ON THE PLANS FOR A SEWAGE DISPOSAL SYSTEM FOR THE CITY OF GREENCASTLE, INDIANA.

(Prepared by the Riggs-Sherman Company, Toledo, Ohio.)

The plans consist of a map of the city of Greencastle, Indiana, with elevations and show the arrangement for carrying off the sewage to a point north of the city where it will go through a sewage disposal system before entering Big Walnut Creek. This creek empties into Eel River which in turn carries the water to White River. The map submitted indicates only the direction in which the city sewage is to flow and the depth of the manholes. No idea is given as to the grades of the sewers nor their size. From the map, the system seems to be nicely laid out and it does not appear that the sewage in any place is required to run up hill, but it is my impression that some idea should be given as to the capability of the sewers for carrying all the sewage produced throughout the city and also some statement as to whether or not the system is to be a combined system carrying off both sanitary sewage and storm flow, or simply one to take care of the sanitary sewage and thus requiring some other disposal of the storm flow, if there is not already one installed.

The blue print map showing the sewage disposal system is very incomplete in detail and having no idea of the amount of sewage to be cared for, it is impossible to state whether or not the septic tank and filters are of adequate capacity to take care of the amount of sewage that will be produced.

The septic tank has baffle walls extending from the top to within a short distance of the bottom. The flow of sewage is indicated as being entirely below these baffle walls which leaves a space of several feet for sewage to collect and coagulate, with no outlet to the filters. Owing to the lack of knowledge as to the method that is proposed for the operation of this plant, it seems that the installation of these baffle walls as they are now indicated, will reduce the capacity of the tank so that the length of time the sewage will be allowed to remain is limited to the distance from the bottom of these baffle walls to the bottom of the septic tank. If this is true, the velocity of flow will be increased materially and the time for septic action will be reduced, in my judgment, to about one-fourth of what could be had if these baffle walls were not installed or if they were installed in a different way.

Another feature that needs explanation is the 14-inch cast iron pipe overflow from the filter into the sedimentation basin. Unless some good reason is given for this overflow, it strikes me it should be entirely eliminated. There is a sedimentation basin and sludge basin following this filter. Again, owing to the lack of knowledge of the scheme by which this

plant is to be operated, I am at a loss to know why these basins are so installed.

Knowledge is also desired as to the type of the sprinkling nozzle that is to be installed and the material that is to be used in the bed. The under drains are indicated in this design as being several feet apart. If this plant is of the ordinary type of sprinkling filters, it is, in my opinion, not sufficiently drained.

Information should also be furnished as to the quality of the effluent that will come from this plant in order to determine whether or not the proposed ideas will be at all satisfactory.

Before these plans are approved, it is my opinion that a detailed description and profile maps of the system of sanitary sewage and sewage disposal proposed, should be furnished, either in writing or in a personal interview with the designing engineers.

After explanation by the Riggs-Sherman Co. of the objections set forth in the above report, and after consideration, it was

Ordered, That the said plans are approved.

EXPENSE ACCOUNTS.

Ordered, That the Secretary shall not accept and present for payment any expense accounts which do not fully and completely comply with the Mull law, as follows:

(1) Each voucher must represent a single item of expense, and must be clearly written and plainly signed.

(2) No voucher will be accepted for chair car, parlor car or sleeping car fare unless the distance traveled exceeds 100 miles, and when money is expended for such fare, the conductor's receipt must be submitted.

(3) No voucher will be accepted for tips to waiters, porters, or for personal service.

(4) When in the collection of samples for analysis, it is essential to the success of their work that the identity of inspectors remain unknown, vouchers will not be required for the purchase of such samples, but in each instance a *special slip marked "Secret Purchase"* must be submitted.

(5) No expenditure will be authorized for the purchase of postage stamps, stationery, blank books, paper or other office supplies. They can be and must be obtained at the office of the Department.

(6) No bills for incidental expenditures will be allowed.

(7) On the last day of each month, all vouchers covering expenditures during the month shall be forwarded to the superintendent of the department to which they belong, together with ex-

pense account, made in duplicate. The expense account must be clearly written and must show plainly the expenditures, indicated by the accompanying vouchers and all secret purchases and railroad and street car fares. When this cannot readily be done, the vouchers must be numbered and so entered on the expense account.

(δ) All vouchers shall be arranged in order of date and clearly worded to check the individual items of the expense account memorandum.

The following rules, as placed under their separate headings, were duly passed:

GENERAL RULES.

RULE 1.—County health commissioners, city and town health officers shall familiarize themselves with the State Health Law, the Vital Statistics Law, the Quarantine Law, the Pure Food and Drug Law, and all laws they are to enforce. They shall also familiarize themselves with all the rules of the State Board of Health for the enforcement of said laws. They shall be diligent in discharging their duties, remembering that honor and better pay always follow work that is well done. In June of each year they shall make a sanitary inspection of their respective jurisdictions, making a full record thereof in their regular record books, with which all must be supplied. A copy of said sanitary inspection shall be sent to the State Board of Health by July 15, following.

County health commissioners shall make a special monthly health report to the State Board of Health by the eighth of each month for the month preceding, and said report shall give the number of cases reported of typhoid fever, scarlet fever, smallpox, diphtheria and membranous croup; also information concerning epidemics, closing of schools, nuisances abolished, and all obtainable sanitary information. They shall also make quarterly reports of marriages and contagious diseases on the blanks furnished by the state board.

APPOINTING DEPUTIES.

County health commissioners may appoint deputies in their counties, and they are advised to appoint as deputies all city and town health officers, for this will give said city and town officers jurisdiction in the neighborhood of their cities and towns for the benefit of said cities and towns, and they may be called upon at times to aid in county health work. Written commissions of appointment should be given to deputies. Undertakers and druggists make competent deputies in unincorporated towns, who may issue burial permits and keep county officers informed in the health affairs of their respective neighborhoods. The pay of deputies will be whatever county health commissioners and county auditors will allow.

County health commissioners shall make such reports to the State Board of Health as may be required by said board and shall answer all letters of inquiry of said board.

VITAL STATISTICS.

RULE 2.—REGISTRATION AREAS.—The registration areas shall be: County Area, which is the area outside of the corporation of cities and towns; the City Area and Town Area, which are respectively, the areas within the corporation of cities and towns.

County health commissioners shall collect and record the vital statistics from the respective County Areas, and city and town health officers for their respective City and Town Areas.

RULE 3.—DEATHS.—Blanks for death statistics supplied by the State Board of Health are: Death certificates, burial permits, no death cards, official envelopes, monthly statement cards. Death record books shall be purchased by local boards of health. The physician in attendance at a death, or the householder, if no physician is in attendance, shall immediately make out a death certificate and personally deliver said death certificate or instruct that it be delivered to any health officer or deputy, who, upon receipt of the same, provided, said certificate is completely filled out, is written in ink or indelible pencil, and is otherwise acceptable, shall make out a burial permit, for which no fee shall be charged. Said burial permit is valid in all parts of the state. When no physician is present at a death, and the householder can not be found, and it is not a coroner's case, the health officer shall make out the death certificate and sign it. All health officers shall immediately copy into their death record books all death certificates they receive which belong to their jurisdictions, and carefully preserving said certificates, shall send them to the State Board of Health, in the official envelopes, by the 4th of each month, for the month preceding, and there shall always be enclosed with the said certificates, a monthly statement card, filled out according to the blanks on said card. In the event any health officer has no deaths to report for his jurisdiction in any month, then he shall send to the state board a "No death card" to show the matter of reporting has not been overlooked. If a health officer receives a certificate of death which does not belong to his jurisdiction, he shall, after issuing a burial permit thereon, immediately send said certificate to the officer of the jurisdiction to which it does belong. When a death occurs outside of the state, and the remains are brought into the state for interment, the burial permit shall be based upon the transportation permit, and no record of said death is required.

RULE 4.—BIRTHS.—Blanks for birth statistics supplied by the State Board of Health are: Birth certificates, supplemental report of births, no birth cards, official envelopes. Birth record books shall be purchased by local boards of health.

All births shall be reported within twenty days after occurrence upon official birth blanks, by the physician or midwife in attendance, if any, otherwise by the householder; all births for the county areas being directly reported to the County Health Commissioner, and all births for city and town areas to their respective officers. Health officers shall immediately record births in the birth record books, and by the 4th of each month, all original birth certificates in the hands of health officers, shall be sent to the State Board of Health. A child born dead at seven months gestation, or over, shall be reported and recorded both as a birth and a death, and a burial permit is required, as in the case of a regular death.

In the event the child born is illegitimate, the physician or midwife in attendance shall give as name of the father such name as is supplied by the mother or her friends, but he shall not in any degree be responsible for the same.

SUPPLEMENTAL BIRTH REPORT.

If a certificate of birth of a living child is presented without statement of the given or christian name, then the local health officer shall deliver to the attending physician, or midwife or to the mother, or father, a blank "Supplemental report of birth," which shall be filled out by the person receiving same, with the full name of the child, including the given or christian name and surname, as soon as said child shall be named, and said mother or father shall forthwith send or deliver the properly filled out blank to the health officer of the area in which the birth occurred. The original certificate of birth shall not be considered to be complete until such statement of given or christian name shall be filed or the blank returned with the statement, "Died unnamed."

RULE 5.—MARRIAGES.—Blanks for marriage statistics supplied by the State Board of Health are: Marriage returns, which are sent direct to county clerks from state board. Quarterly return blanks supplied only to county health commissioners by state board. Marriage record books shall be purchased by local boards of health.

All ministers and other persons authorized to perform marriages, shall report on official blanks, each marriage they may perform, to the clerk of the county, within five days after the marriage, and the said clerk shall report said marriages to the County Health Commissioner on or before the 5th day of each month for the month preceding, and the County Health Commissioner shall record each marriage in the official marriage record book. The County Health Commissioner shall also, each quarter, fill out the marriage blanks he receives from the State Board of Health and then send said blanks to the State Board within ten days after the end of each quarter.

RULE 6.—INFECTIOUS DISEASES.—Blanks for infectious disease statistics supplied by the State Board of Health are: Report of infectious disease blanks, to all health officers. Quarterly return blanks sent to county health commissioners. Infectious disease record books shall be purchased by local boards of health.

All cases of infectious and contagious diseases which are listed in Rule 10, shall be immediately reported on the official blank to the health officer having jurisdiction by the physician, if any be in attendance, otherwise by the householder or attendant. The health officer receiving said report shall immediately enter the same in his infectious disease record book, and in person or by deputy, establish quarantine, as directed in Rule 11 (page 25). All city and town health officers shall preserve the original infectious disease certificates they may receive and send the same to their county health commissioner by the 2d of each month for the month preceding, and said county health commissioner shall use the same for making up his special report, as commanded in Rule 1.

RECORD BOOKS, STATIONERY, QUARANTINE CARDS, ETC.

RULE 7.—All necessary printing, such as letter heads, envelopes, circulars, quarantine cards, etc., shall be paid for by county health commissions, city and town boards of health from their special health appropriations; and said county health commissions and boards of health shall also purchase, as needed, official record books as follows: Death records, birth records, infectious disease records, and county health commissions shall add marriage records. City boards of health, in cities having less than 2,000 population, and all town boards of health, shall purchase combination record books, which contain separate divisions for recording births, deaths and infectious diseases.

BURIAL.

Blank burial permits are supplied by the State Board of Health.

RULE 8.—**BURIAL.**—Human remains, exceeding seven months' gestation, shall not be buried without a permit issued by a health officer or deputy, and no permit shall be issued unless the health officer or deputy has in hand a certificate of death properly filled out in ink or indelible pencil. In all cases of death from cholera, bubonic plague, leprosy, typhus fever, yellow fever, smallpox, diphtheria, membranous croup and scarlet fever, the funeral shall be strictly private, and the burial shall be made within twenty-four hours after death; and no public or church funeral shall be held or any person permitted to enter the house containing the remains, except the undertaker and his assistants, unless by permission of the health officer.

RULE 9.—Buried human remains shall not be disinterred or removed without permission from the State Board of Health, and blank applications for disinterment and removal may be had at any time upon application to said State Board.

DISINTERMENT.—When disinterment and reinterment is to be made in the same cemetery, then no permit is required. Bodies which have lain over one week in a vault are to be regarded as buried, and must not be removed, buried or otherwise disposed of without a permit. If remains are deposited in a vault and subsequently removed for burial in the same cemetery, no permit is required.

QUARANTINE.

Quarantine cards shall be purchased by local health authorities from their funds and shall be as ordered in Rule 11.

RULE 10.—**INFECTIOUS DISEASES.**—The infectious and contagious diseases which shall be immediately reported to the health officer having jurisdiction and which shall be quarantined are hereby declared to be: Yellow fever, smallpox, cholera, diphtheria, membranous croup, scarlet fever, measles, typhus fever, bubonic plague, leprosy, pulmonary consumption, typhoid fever, chickenpox, and whooping cough—

Provided, pulmonary consumption and typhoid fever shall not be quarantined, as they are to be reported for record only, and chickenpox, whooping cough and measles shall be carded to warn the public, absolute quarantine not being required.

RULE 11.—QUARANTINE.—Health officers, upon learning in any way of the existence of any disease listed in Rule 10, within their respective areas, shall immediately, in person or by deputy, quarantine the infected house, rooms, or premises, so as effectually to isolate the case, or cases, and the family, if necessary, in such manner and for such time, as may be necessary to prevent transmission of the disease; and whenever a quarantine is established a placard shall be posted in a conspicuous position, giving the name of the disease in letters not less than two inches long, and also having upon the card the following notice:

“All persons are forbidden to enter or leave these premises without special permit from the health officer having jurisdiction, and all persons are forbidden to remove or mutilate this card, or to in any way interfere with the quarantine without orders from said health officer.”

VIOLATION OF QUARANTINE.—Whoever violates a quarantine, either by entering or leaving the quarantine area, or demolishes or tears away the ropes or other marks whereby the boundaries of a quarantine are defined, and whoever tears down, obscures, destroys, mutilates or defaces a quarantine placard, or who breaks a quarantine in any way whatsoever, except as provided in Rule 13, shall suffer the penalty prescribed in Section 3, of Chapter LXXXIII of the Acts of 1903, to wit: A fine of ten to fifty dollars, to which may be added imprisonment in the county jail not exceeding six months.

RULE 12.—When visiting patients known to be sick with smallpox, scarlet fever or diphtheria, health officers, nurses, undertakers and attending physicians shall take reasonable precautions against carrying infection.

RULE 13.—OBSERVING QUARANTINE.—No person other than licensed physicians, undertakers or nurses may enter or leave any house or building infected with any communicable disease listed in Rule 10, without first procuring permission from the health officer having jurisdiction, and obeying absolutely his directions as to all sanitary precautions which he orders.

RULE 14.—TRAVEL FORBIDDEN.—Any person who is, or who has been recently affected with any communicable disease, listed in Rule 10 (omitting pulmonary tuberculosis and typhoid fever), shall not be permitted to travel in railway or trolley cars or appear upon the public streets or highways, or to appear in any public place or gathering, or to travel in any public vehicle or vessel, until a certificate is issued by the attending physician to the health officer within whose jurisdiction the case occurs, stating that all danger from infection or contagion by reason of such disease, is passed, and such certificate is approved and endorsed by said health officer, and written permission is given to the person.

RULE 15.—PHYSICIAN NOT IN ATTENDANCE.—Whenever a health officer shall know or suspect or be informed of the existence of any communicable disease dangerous to the public health, and no licensed physician is in attendance, or should said physician while in attendance fail or refuse to immediately report such case to the health officer, it shall be the duty of said health officer, or deputy, to examine such case or cases of alleged communicable disease dangerous to the public health, and act as required by the rules governing such cases of communicable disease.

RULE 16.—SMALLPOX QUARANTINE.—In all cases where there has been an exposure or a suspected exposure to smallpox of any person or persons, it shall be the duty of the health officer under whose jurisdiction said person or persons may be temporarily or permanently residing, to quarantine for fourteen days or keep under observation such person or persons as may be exposed or suspected of having been exposed to smallpox, and to advise vaccination or re-vaccination of all who may have been exposed. It shall be the imperative duty of the health officer to enforce this rule, and in case of refusal or neglect by said health officer to comply with the requirements of this rule, or other rules, it shall be the duty of the secretary of the State Board of Health to assume charge, and either in person or by deputy, enforce the foregoing rules. All vaccinations shall be made with non-humanized virus, the only exception being that, during an epidemic of smallpox, should a sufficient quantity of bovine virus not be obtainable, humanized virus may then be used when sanctioned by the board of health under whose jurisdiction said epidemic may occur. If in the judgment of the health officer, it is deemed safe for an exposed person to be at liberty after vaccination and after disinfection in body and apparel, the said exposed person shall be given a certificate of health and not be placed in quarantine. If the said exposed person changes his or her location, the health officer having jurisdiction shall inform the health officer at the new location.

DISINFECTION.

RULE 17.—SUBLIMATE DISINFECTION.—The room and, if necessary, the entire house in which there has been a case of any contagious disease listed in Rule 10, shall be immediately disinfected following the recovery of the sick or the removal of the remains, by any of the following methods, to wit:

All surfaces shall be thoroughly washed with a solution of corrosive sublimate of the strength of one part in 1,000 parts of water. The walls and ceiling, if plastered, should be brushed over with this solution, after which they should be whitewashed with lime wash. Especial care must be taken to wash away all dirt from window ledges and other places where it may have settled, and to cleanse thoroughly crevices and out-of-the-way places. After the application of this disinfecting solution and an interval of twenty-four hours or longer, for free ventilation, the floors and woodwork should be well scrubbed with soap and hot water, and this should be followed by a second more prolonged exposure to fresh air admitted through open doors and windows. Schoolbooks or books from a circulating library shall not be removed from any house during the prevalence of any contagious disease dangerous to the public health, and if such books have been in such houses during the prevalence of said diseases, they shall be destroyed by the owner or library authorities or be properly disinfected before returned to schools or put in circulation.

Formaldehyde disinfection may be used instead of above method as follows:

WASHABLE ARTICLES.—Into a tub or other receptacle of appropriate size, put enough water to cover the handkerchiefs, towels, napkins, sheets, blankets, or other washable articles, and to each gallon of water used, add one gill (four fluid ounces) of 40 per cent. formaldehyde solution. Stir the

water and formaldehyde together and then put in the articles. Let soak for not less than one hour, then launder as usual.

UNWASHABLE ARTICLES.—Quilts, comforts, pillows, mattresses, carpets, rugs, clothing, etc., if old and dirty, should be burned, otherwise may be disinfected by placing them in a box, closet or tight room that is itself to be disinfected, and then filling the room with formaldehyde gas and moisture.

ROOM DISINFECTION.—1. Carefully close all windows and doors, except one door for exit. Paste paper over stove-pipe holes, and apply wetted paper or, better, paste paper strips over all windows, transom or door cracks. In a word, seal the room tightly with paper strips from the inside.

2. Open closet doors, drawers, trunks, boxes, etc. Suspend clothing and bed clothes upon lines stretched across the room, or spread out on chairs or clothes horse. Books must be opened and the leaves spread. In short, the room and its contents must be so disposed as to secure free access of gas to all parts and all objects.

3. Make the air in the room damp; this is absolutely necessary for disinfection, either by sulphur or by formaldehyde. Dampness may be produced (a) by boiling water on a gas, gasoline or oil stove; (b) by pouring boiling hot water from a tea kettle into a tub; (c) by pouring hot water on to bricks or stone, or by dropping hot bricks or stones into vessels containing water. Under no circumstances is efficient disinfection possible without in some way making the air of the room quite damp.

4. Measure the room and multiply the length, breadth and height together. This will give the contents in cubic feet. Divide by 1,000 and this gives the number of thousand cubic feet in the room. This is called the unit space.

5. Measure the room, and for each 1,000 cubic feet (unit space) use two pints of formaldehyde and thirteen ounces of commercial permanganate of potassium. Procedure: Place a large washbowl, crock, tin dishpan or galvanized iron pan or tub in the center of the room. Put in the required amount of permanganate of potassium and lastly pour in the required amount of formaldehyde. Permanganate must be put in first. Retire immediately after pouring in the formaldehyde, for the formaldehyde gas is promptly released and is injurious if breathed in any quantity. Keep the room closed for at least three hours, then open, air thoroughly, and clean in the usual way.

Solidified formaldehyde may be used for gaseous room disinfection, using not less than one ounce of solidified formaldehyde for each 1,000 cubic feet, not neglecting moisture.

DISINFECTION OF CLOTHING OR A FEW ARTICLES.—Take an empty trunk, wooden box or wash boiler. On the bottom lay any article. Cover with towel or a piece of wash goods, and sprinkle thereon two tablespoonfuls of 40 per cent. formaldehyde solution. Then put in another article, say a pair of trousers or a dress skirt, cover as before and again sprinkle two tablespoonfuls of formaldehyde. If there are enough articles the boiler or trunk may be filled in this way. Finally put on the cover to the boiler or close the trunk, and in ten hours open and hang out in the air and sunshine. If the smell of the formaldehyde persists, a little aqua ammonia sprinkled on the clothes will remove it.

DISINFECTION BY SULPHUR MAY BE USED AS FOLLOWS.—Place a tub containing about two inches of water in the room. Put two bricks in the tub and on them place an iron or tin pan or a stone crock, and in the pan or crock, place three pounds of sulphur for every 1,000 cubic feet. Now fill the room with steam. When the room is full of steam, pour a spoonful of alcohol or coal oil into the sulphur and set on fire. The sulphur is burned to a gas and this gas, in the presence of the steam, kills all infection. Sulphur gas without steam, is worthless. Do not on any account, leave out the steam. "Sulphur candles" purchasable at drug stores, are all right, if enough are used, but they are more expensive than ordinary sulphur and of course must have steam as ordinary sulphur.

A STANDARD DISINFECTANT.—Dissolve chloride of lime of the best quality in pure water in the proportion of six ounces to the gallon. Keep in a stone jar or jug. Use one quart of this solution for each discharge from a patient suffering with any contagious or infectious disease. Mix well and leave the vessel for an hour or more before throwing in privy vault or water closet. The same for vomited matter. For a very copious discharge, especially in typhoid fever, use a larger quantity; and for solid or semi-solid matter, use the solution in double strength. Discharge from the throat and mouth should be received into a cup half full of the solution, and those from the nostrils upon soft cotton or linen rags which should be immediately burned.

RAILWAYS, STEAMBOATS AND ALL COMMON CARRIERS.

RULE 18.—No common carrier or any person shall knowingly bring into the State of Indiana any person sick or suspected of being sick, with Asiatic cholera, smallpox, yellow fever, typhus fever, diphtheria, membranous croup and scarlet fever, bubonic plague, leprosy or other communicable disease dangerous to the public health.

RULE 19.—When any railway car, steamboat, vessel or other conveyance, coming from a place or locality declared by the State Board of Health, or other health authority having jurisdiction, as being infected with cholera, smallpox, typhus fever, bubonic plague, leprosy, scarlet fever, diphtheria, membranous croup, yellow fever, or having on board any person or persons affected with any of the above named diseases, enters any port or place in the State of Indiana, such railway car, steamboat, vessel or other conveyance and the crew, officers, passengers, baggage, merchandise and freight shall be subject to such inspection, disinfection and control as may be ordered by the State Board of Health.

RULE 20.—If any person is found on any railway car, steamboat or other conveyance, who is sick, or reasonably supposed to be sick, with cholera, smallpox, typhus fever, bubonic plague, leprosy, yellow fever, or scarlet fever, he or she shall be immediately removed by the health authorities within whose jurisdiction such person is found and isolated and properly cared for until the termination of the disease, and the necessary expense of such isolation and care (if the person so removed is unable to pay the same) shall be a valid claim against and be refunded by the owners, agents or assigns of the railway car, vessel or other conveyance from which such person or persons were removed.

RULE 21.—In case of smallpox, all persons reasonably suspected of having been exposed thereto, shall be removed from such railway car, steamboat, vessel or other conveyance and disinfected in person and apparel, and held in quarantine until such time as the state health commissioner or health officer having jurisdiction shall deem it safe to the public. In case of typhus fever, all persons reasonably suspected of having been exposed thereto, shall be removed and isolated for twenty-one (21) days from the last exposure. The clothing of persons so removed and all baggage, luggage, freight or merchandise found on any railway, steamboat, vessel or other conveyance, on which there is any person sick with cholera, smallpox, typhoid fever, bubonic plague, scarlet fever or diphtheria, and reasonably suspected of having been infected, shall be at once disinfected or destroyed, and such railway car, steamboat, vessel or other conveyance shall also be disinfected, according to the rules governing disinfection.

RULE 22.—When deemed necessary by the State Board of Health, to prevent the spread of cholera and after ten (10) days' notice, each and every railway car, steamboat, vessel in or coming into the State of Indiana, and used for the transportation of passengers, shall be provided with means satisfactory to said board of health for disinfecting the excreta of passengers and crew.

RULE 23.—It shall be the duty of any conductor of any railway or traction car, and the master of any steamboat or vessel to notify immediately by telegram or telephone, the Secretary of the State Board of Health at Indianapolis, of any case or suspected case of cholera, smallpox, yellow fever, diphtheria, scarlet fever, bubonic plague, or typhus fever occurring on board such train or electric car, boat or vessel within the limits of the State of Indiana.

RULE 24.—Retiring health officers shall keep possession of the books of their offices for ten days after expiration of their terms in order to make up reports for the last month of their incumbency, and, after said ten days, the said books shall be delivered to the new incumbent, who shall immediately bring them up to date. And all boards of health shall withhold the last month's pay of retiring health officers until all books are properly turned over and all reports properly made.

RULE 25.—Any person or persons, or any board of health, or health officer, or corporation violating, failing or refusing to comply with either or any of the foregoing rules, will be subject to the penalties provided in the health statutes, wherein these rules are authorized.

RULE 26.—In case any person feels aggrieved at any act or decision of a health officer, appeal may be made to the State Board of Health in session or to its secretary, but pending such appeal the act or decision of said health officer shall stand.

RULE 27.—Any person who violates any rules or regulations of the State Board of Health shall be prosecuted for such violation according to the law.

RULE 28.—All rules or parts of rules in conflict with these rules are hereby repealed.

CONSTRUCTION OF SCHOOL BUILDINGS.
RULES OF THE INDIANA STATE BOARD OF HEALTH DIRECTING
SPECIFIC FEATURES IN THE CONSTRUCTION OF SCHOOL-
HOUSES NECESSARY TO SECURE SANITARY CONDITIONS.

Passed by the Indiana State Board of Health under the authority and in accordance with the health statutes as appears in the minutes of said Board for July 9, 1909.

Attest; J. N. HUNTER, Secretary.

"The State Board of Health shall have power to regulate and prescribe the character and location of plumbing, drainage, water supply, disposal of sewage, lighting, heating and ventilation and all sanitary features of all public buildings and institutions; to pass rules governing the duties of all health boards, and all health officers, governing the collection of vital statistics, governing the hygienic disposal, transportation and disinterment of the dead, governing the specific features of quarantine and for the enforcement of the State health and registration laws, and any violation of said rules shall be punished by a fine of not less than five nor more than fifty dollars for each offense."

Acts Indiana General Assembly, 1909.

The Attorney-General says: "The rules established by the State Board of Health have the force of statutes, and a law authorizing their adoption is constitutional."

Blue v. Beach, 155 Ind. 121, 130.

Isenhour v. State, 157 Ind. 517, 521.

RULE 1.—SITES.—All schoolhouse sites shall be dry, and such drainage as shall be necessary to secure and maintain dry grounds and dry buildings, shall be supplied. Said site and said buildings shall not be nearer than 350 feet to steam railroads or any noise-making industry or any unsanitary or unhealthful conditions whatsoever. Good walks shall lead from the street or highway to every schoolhouse and dry playgrounds shall be provided.

RULE 2.—BUILDINGS.—Brick school buildings shall have stone foundations, or foundations may be of brick, provided a layer of slate, stone or other impervious material be interposed above the ground line, or foundations may be of vitrified brick, or impervious concrete, in which case, the layer of impervious materials shall not be required. All two-story schoolhouses shall have dry, well-lighted basements under the entire building; said basements shall have cement floors, and the ceilings shall be not less than nine feet high. The ground floor of all schoolhouses shall be raised at least three feet above the ground level to lower edge of first floor joists. One-room schoolhouses shall have solid foundations of brick, stone or concrete, and the area between the ground and the floor shall be thoroughly ventilated, and basements are recommended. Each pupil shall be provided with not less than 225 cubic feet of space, and the interior walls shall be either painted or tinted some neutral color, as gray, slate, buff or green.

RULE 3.—LIGHTING AND SEATING.—All schoolrooms shall be lighted from one side only, and the glass area shall be not less than one-sixth of the floor area, and the windows shall extend to not more than one foot from the ceiling, all windows to be provided with roller or adjustable

shades of neutral color, as blue, gray, slate, buff or green. In all schoolhouses desks shall be so placed that the light shall fall over the left shoulders of the pupils.

RULE 4.—BLACKBOARDS AND CLOAKROOMS.—Blackboards shall be preferably of slate, but of whatever material, the color shall be a dead black. Cloakrooms, well lighted, warmed and ventilated, or sanitary lockers, shall be provided.

RULE 5.—WATER SUPPLY AND DRAINING ARRANGEMENTS.—All schoolhouses shall be supplied with pure drinking water and the water supply shall be from driven wells or other source approved by the health authorities. Only stout smooth glass, or pressed metal drinking cups are permitted, each child preferably being provided with an individual cup. Water buckets are condemned and forbidden; and whenever it is practicable, flowing sanitary fountains which do not require drinking cups should be provided. When water is not supplied from public water faucets, sanitary flowing fountains or wells, then covered tanks or covered coolers with free flowing faucets shall be provided. All schoolhouse wells shall be supplied with troughs or drains to carry away waste water, and under no conditions shall pools or sodden places or mudholes be allowed to exist near a well.

RULE 6.—HEATING AND VENTILATION.—Heating apparatus of all kinds, shall be capable of maintaining a temperature of 70 degrees Fahrenheit in zero weather and of maintaining a relative humidity of at least 30 per cent; and said heaters shall receive air from outside the building and after heating, introduce it into the schoolroom at a point not less than five nor more than seven feet from the floor and at a minimum rate of 30 cubic feet per minute for each pupil. When direct-indirect steam or hot water heating is adopted, then the openings or ducts for admitting outside air, shall be opposite the radiators. Halls and office rooms may be heated with direct steam or hot water radiators, but direct steam and direct hot water heating are forbidden for schoolrooms. Ordinary stoves are condemned and forbidden.

All schoolrooms shall be provided with efficient exit ventilating ducts of ample size.

RULE 7.—WATER CLOSETS, DRY CLOSETS AND outhouses.—Water closets or dry closets, when provided, shall be efficient and sanitary in every particular; and when said closets are not provided, then good fly tight, well ventilated outhouses for the sexes, separated by closely built fences shall be provided. Good dry walks shall lead to the outhouses and solid screens or shields shall be built in front of them. Outhouses for males shall have urinals arranged with stalls and with conduits of galvanized iron or other impervious material draining into a sewer, vault or other suitable place.

RULE 8.—These rules directing specific features in the construction of schoolhouses necessary to secure sanitary conditions, shall apply to all new buildings erected and to all old buildings rebuilt or remodeled after the passage of said rules, and all health officers shall see to the enforcement of these rules and promptly enter prosecution for any violation thereof.

RULE 9.—All former rules relating to this subject are repealed.

SANITATION OF SCHOOLS.

**RULES OF THE INDIANA STATE BOARD OF HEALTH GOVERNING
THE SANITATION OF PUBLIC, PRIVATE AND PAROCHIAL
SCHOOLS IN THE STATE OF INDIANA.**

Passed by the Indiana State Board of Health under the authority and in accordance with the health statutes, as appears in the minutes of said Board for July 9, 1909.

Attest: J. N. HURRY, Secretary.

"The State Board of Health shall have power to regulate and prescribe the character and location of plumbing, drainage, water supply, disposal of sewage, lighting, heating and ventilation and all sanitary features of all public buildings and institutions; to pass rules governing the duties of all health boards, and all health officers, governing the collection of vital statistics, governing the hygienic disposal, transportation and disinterment of the dead, governing the specific features of quarantine and for the enforcement of the state health and registration laws, and any violations of said rules shall be punished by a fine of not less than five nor more than fifty dollars for each offense."

Acts Indiana General Assembly, 1909.

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Blue v. Beach, 155 Ind. 121, 130.

Isenhour v. State, 157 Ind. 517, 521.

EXPLANATION.

"Simultaneously with the annual opening of the public schools, diphtheria, measles, mumps, scarlet fever and many other diseases usually increase. This is caused by unclean schoolrooms and furniture and by the congregating of the pupils. They mass together, and contact spreads infection. Some few pupils may have just recovered from a communicable disease, or they may be from families that have been smitten, and, being infected, they transmit disease to those who are susceptible. It is reasonable to assume that the suddenly imposed confinement in the school after a period of freedom frets the children for a few days, causing more or less nervousness, and so resistance is temporarily lowered. In this way susceptibility may be increased and sickness may more readily follow. To do all that is possible to prevent the usual school-opening increase in illness is the object of these rules.

"It is ordered in the rules that desk tops and banisters be washed with soap and hot water, and afterward be treated with a disinfectant. This is required because disease germs may be planted upon exposed desk tops and banisters by infected persons, and, being transferred by the children's hands to their mouths, disease results. The washing and disinfecting will do much to prevent infection from this source.

"Open water buckets and large tin cups are condemned because the dipping of water with cups which are used by many introduces spittle into

the supply; and, besides, open buckets catch dust and dirt. Diphtheria, scarlet fever, diarrhoea, sore mouth and other complaints have been transmitted in this way. This source of disease may be avoided to a considerable degree by supplying a covered tank with a large, free-flowing faucet and a small cup. The opening of a large faucet will furnish a strong stream, which will suddenly fill the cup and wash the saliva from the edge. Ample drainage must be provided for carrying away the waste water.

"Slates are condemned because of their uncleanness. Writing and figures being obliterated, as they frequently are, with spittle, and as the damp slates readily collect dust, the danger of the transmission of disease in this way is very great. Small children generally place pencils and pens in their mouths, and if these articles are promiscuously distributed without being sterilized, as the rules direct, infection may result. The collecting of pencils seems necessary to always insure one to each pupil.

"Spitting is prohibited, because it is a possible source of disease, is filthy, and is unnecessary.

"It may seem shocking and unnecessary to many to exclude consumptives from the schools, but when we stop to think that tuberculosis causes one in every seven deaths, killing more people annually than murder, cholera, smallpox, diphtheria, scarlet fever and yellow fever combined, then it is time to lay aside that sentiment and pity which would perpetuate disease and death, and take on those qualities in that higher form which makes them forces for more abundant and better life.

"These rules may seem trifling and unnecessary to those who have not given consideration to modern sanitation, but the teacher, more than any other public officer, may secure the physical well-being of the pupils, as well as their intellectual advancement.

"It is hoped that all school authorities of the State will promptly enforce these rules.

"Health officers shall see to the enforcement of these rules."

RULE 1.—SCHOOL OVERCROWDING FORBIDDEN.—School authorities shall not crowd children into schoolrooms in excess of one child to each 225 cubic feet of space, and it shall be the duty of the State Health Officer and of all health officers having jurisdiction, to dismiss forthwith any schoolroom in which 225 cubic feet of air space is not supplied to each pupil; and the school authorities shall without delay make provision for pupils in accordance with the requirement herein set forth.

RULE 2.—SICK SCHOOL CHILDREN TO BE SENT HOME.—All teachers, all school trustees, and all health officers having jurisdiction shall not permit attendance in any private, parochial or public school of any pupil affected with a severe cough, a severe cold, itch, lice or other vermin or any contagious skin disease, or who is filthy in body or clothing or odorous therefrom or who has any of the following dangerous infectious diseases, to wit: Diphtheria, smallpox, scarlet fever, measles, whooping cough, chickenpox, consumption. And the teachers in all schools shall, without delay, send home any pupil who is obviously sick, even if the ailment is unknown, and said teachers shall inform the parents or guardian of said pupil and also the local health officer as speedily as possible, and said health officer shall examine into the case and take such action as is reasonable and necessary for the benefit of the pupils and to prevent the spread of infection.

RULE 3.—SICK CHILDREN NOT ALLOWED AT SCHOOL.—Parents, guardians or other persons having control of any child who is sick in any way or is affected by any disease listed in Rule 2 shall not permit said child to attend any public, private or parochial school, or to be present in any public place; and any person having pulmonary consumption shall not be employed as a teacher or janitor in any public, private or parochial school.

RULE 4.—TEACHERS AND OTHERS NOT ADMITTED WHEN ILL.—School teachers, pupils or other persons shall not be admitted to any public, private or parochial school, who have come from, or who reside in any house or building which harbors or is infected with any disease listed in Rule 2, or who have recently been affected with any such disease unless they have written permission from the health officer having jurisdiction.

RULE 5.—CLEANING AND DISINFECTING.—All schoolhouses, before school opens in the autumn, shall be cleaned, and, if considered necessary by the school authorities or health officer of the district, they shall be disinfected. The cleaning shall consist in sweeping and scrubbing the floors, thoroughly washing all woodwork, including the wooden parts of desks and seats, and the disinfecting shall be done as directed in the rules of the state board.

RULE 6.—VENTILATION, DRINKING WATER AND DRINKING VESSELS.—Ventilation must be carefully attended to in all schoolrooms, and when ventilating ducts do not exist, it shall be the duty of the teachers to flood the schoolroom with fresh air by opening windows and doors at recess and at noontime, and also whenever the air becomes close or foul. The pupils shall be given gymnastic exercises during the time windows are open in cold weather. All schoolhouses shall be supplied with an abundance of pure drinking water.

All schoolhouse wells shall be supplied with troughs and drains to carry away waste water, and under no conditions shall pools, sodden places or small or large mud-holes be allowed to exist near wells. Buckets and all open water receptacles are condemned and forbidden, for such furnish most excellent opportunities for transmitting disease germs which occur in saliva. When water is not supplied at the pump or from water faucets, or from sanitary flowing drinking fountains, then covered tanks or covered coolers with free flowing faucets shall be supplied. Drinking vessels shall be straight smooth glass or of pressed metal. Individual drinking glasses or cups are recommended.

RULE 7.—WATER CLOSETS AND PRIVIES.—Water closets, dry closets and outhouses shall be kept clean and sanitary at all times, and pupils should be taught decency and promptly punished for any indecency. Water closets or dry closets, when provided, shall be efficient in every particular; and when said closets are not provided, then good fly-tight, well-ventilated outhouses for the sexes, separated by closely-built fences, shall be provided. Good, dry walks shall lead to all outhouses and closely-built screens or shields shall be built in front of them. Outhouses for males shall have urinals arranged with stalls and with conduits of galvanized iron or other impervious material draining into a sewer, vault or other suitable place.

RULE 8.—HEALTH OFFICERS SHALL ENFORCE.—Health officers shall enforce these rules and promptly enter prosecution for any violation thereof.

RULE 9.—REPEAL.—All former rules relating to this subject are repealed.

[12—22707]

RULES GOVERNING TRANSPORTATION OF THE DEAD.

Passed by the Indiana State Board of Health according to Chapter 144, Acts 1909, as appears in the minutes of the Board for July 9, 1909.

Attest: J. N. HUNTER, Secretary.

RULE 1. The transportation of bodies dead of smallpox, Asiatic cholera, yellow fever, typhus fever or Bubonic plague is absolutely forbidden.

RULE 2. The bodies of those who have died of diphtheria (membranous croup), scarlet fever (scarlatina, scarlet rash), glanders, anthrax, or leprosy, shall not be accepted for transportation unless prepared for shipment by being thoroughly disinfected by (a) arterial and cavity injection with an approved disinfectant fluid, (b) disinfecting and stopping of all orifices with absorbent cotton, and (c) washing the body with the disinfectant, all of which must be done by an embalmer, holding a certificate as such, approved by the State Board of Embalmers. After being disinfected as above, such body shall be enveloped in a layer of cotton not less than one inch thick, completely wrapped in a sheet and bandaged and encased in an air-tight zinc, tin, copper or lead-lined coffin or iron casket, all joints and seams hermetically soldered, and all enclosed in a strong, tight, wooden box. Or, the body being prepared for shipment by the disinfecting and wrapping as above, may be placed in a strong coffin or casket, and said coffin or casket enclosed in an air-tight zinc, copper or tin case, all joints and seams hermetically soldered, and all enclosed in a strong outside wooden box. Nothing in this rule shall apply to bodies shipped for dissection under the law governing the Indiana Anatomical Board. In case a body is shipped by order of said board it may be done according to the approval of the health officer at the point of shipment.

RULE 3. The bodies of those dead of typhoid fever, puerperal fever, erysipelas, tuberculosis and measles, or other dangerous communicable diseases other than those specified in Rules 1 and 2, may be received for transportation when prepared for shipment by filling cavities with an approved disinfectant, washing the exterior of the body with the same, stopping all orifices with absorbent cotton, and enveloping the entire body with a layer of cotton not less than one inch thick, and all wrapped in a sheet and bandaged and encased in an air-tight coffin or casket: Provided, That this shall apply only to bodies which can reach their destination within forty-eight hours from time of death. In all other cases such bodies shall be prepared for transportation in conformity with Rule 2. But when the body has been prepared for shipment by being thoroughly disinfected by an embalmer holding a certificate as in Rule 2, the air-tight sealing may be dispensed with.

RULE 4. The bodies of those dead of diseases that are not contagious, infectious or communicable, may be received for transportation when embalmed by arterial and cavity injection with an approved disinfectant and encased in a sound coffin or casket and enclosed in a strong outside wooden box, provided they reach their destination within forty-eight hours from the time of death. If the body can not reach its destination within forty-eight hours from time of death, it must be prepared for shipment by filling arteries and cavities with an approved disinfectant, washing the exterior of the body with the same, stopping all orifices with absorbent cot-

ton and enveloping the entire body with a layer of cotton not less than one inch thick, and all wrapped in a sheet and bandaged, and encased in an air-tight coffin or casket. But when the body has been prepared for shipment by being thoroughly disinfected by an embalmer holding a certificate as in Rule 2, the cotton wrapping and air-tight sealing may be dispensed with.

RULE 5. In cases of contagious, infectious or communicable diseases, the body must not be accompanied by persons or articles which have been exposed to the infection of the disease, unless certified by the health officer as having been properly disinfected; and before selling passage tickets agents shall carefully examine the transit permit and note the name of the passenger in charge, and any others proposing to accompany the body, and see that all necessary precautions have been taken to prevent the spread of disease. The transit permit in such cases shall specifically state who is authorized by the health authorities to accompany the remains. In all cases where bodies are forwarded under Rule 2, notice must be sent by telegraph to health officer at destination, advising the date and train on which the body may be expected. This notice must be sent by or in the name of the health officer at the initial point, and is to enable the health officer at destination to take all necessary precautions at that point.

RULE 6. Every dead body must be accompanied by a person in charge, who must be provided with a passage ticket, and also present a full first-class ticket marked "Corpse" for the transportation of the body, and a transit permit--showing physician's or coroner's certificate, health officer's permit for removal, undertaker's certificate, name of deceased, date and hour of death, age, place of death, cause of death, and if of a contagious, infectious or communicable nature, the point to which the body is to be shipped, and when death is caused by any of the diseases specified in Rule 2, the names of those authorized by the health authorities to accompany the body. The transit permit must be made in duplicate, and the signatures of the physician or coroner, health officer and undertaker must be on both the original and duplicate copies. The undertaker's certificate and paster of the original shall be detached from the transit permit and pasted on the coffin box. The physician's certificate and transit permit shall be handed to the passenger in charge of the corpse. The whole duplicate copy shall be sent to the official in charge of the baggage department of the initial line, and by him to the Secretary of State or Provincial Board of Health of the state or province from which said shipment was made.

RULE 7. When dead bodies are shipped by express, the whole original transit permit shall be pasted upon the outside box and the duplicate forwarded by the express agent to the Secretary of the State or Provincial Board of Health of the state or province from which said shipment was made.

RULE 8. Every disinterred body, dead from any disease or cause, shall be treated as infectious or dangerous to the public health, and shall not be accepted for transportation unless said removal has been approved by the state or provincial health authorities having jurisdiction where such body is disinterred, and the consent of the health authorities of the locality to which the corpse is consigned has first been obtained; and all such disinterred remains shall be enclosed in a hermetically sealed (soldered) zinc, tin or copper-lined coffin or box. Bodies deposited in receiving vaults shall be treated and considered the same as buried bodies.

PURE FOOD AND DRUG DEPARTMENT.

RULES OF THE INDIANA STATE BOARD OF HEALTH REGULATING MINIMUM STANDARDS FOR FOOD AND DRUGS, DEFINING SPECIFIC ADULTERATIONS, AND DECLARING THE PROPER METHODS OF COLLECTING AND EXAMINING DRUGS AND ARTICLES OF FOOD.

"The State Board of Health shall adopt such rules as may be necessary to enforce this act, and shall adopt rules regulating minimum standards for food and drugs, defining specific adulteration and declaring the proper methods of collecting and examining drugs and articles of food, and the violation of said rules shall be punished, on conviction, as set forth in Section 10 of this act."

Acts 1907, Chapter 104, Section 7.

Passed by the Indiana State Board of Health according to Chapter 104, Acts of 1907, as appears in the minutes of the Board for July 9, 1909.

Attest: J. N. HURRY, Secretary.

RULE 1.—SUBDIVISION 1.—ANIMAL PRODUCTS.

SECTION A.—MEATS AND THE PRINCIPAL MEAT PRODUCTS.

a. *Meats.*

Par. 1. Meat, flesh, is any clean, sound, dressed, and properly prepared edible part of animals in good health at the time of slaughter, and if it bears a name descriptive of its kind, composition, or origin, it corresponds thereto. The term "animals," as herein used, includes not only mammals, but fish, fowl, crustaceans, mollusks, and all other animals used as food.

Par. 2. Fresh meat is meat from animals recently slaughtered and properly cooled until delivered to the consumer.

Par. 3. Cold storage meat is meat from animals recently slaughtered and preserved by refrigeration until delivered to the consumer.

Par. 4. Salted, pickled and smoked meats are unmixed meats preserved by salt, sugar, vinegar, spices or smoke, singly or in combination, whether in bulk or in suitable containers.¹

b. *Manufactured Meats.*

Par. 1. Manufactured meats are meats not included in paragraphs 2, 3, and 4, whether simple or mixed, whole or comminuted, in bulk or in suitable containers,² with or without the addition of salt, sugar, vinegar,

¹Suitable containers for keeping moist food products, such as sirups, honey, condensed milk, soups, meat extracts, meats, manufactured meats, and undried fruits and vegetables, and wrappers in contact with food products, contain on their surfaces, in contact with the food product, no lead, antimony, arsenic, zinc or copper or any compounds thereof or any other poisonous or injurious substances. If the containers are made of tin plate they are outside-soldered and the plate in no place contains less than one hundred and thirteen (113) milligrams of tin on a piece five (5) centimeters square or one and eight-tenths (1.8) grains on a piece two (2) inches square.

The inner coating of the containers is free from pin holes, blisters and cracks.

²If the tin plate is lacquered, the lacquer completely covers the tinned surface within the container and yields to the contents of the container no lead, antimony, arsenic, zinc or copper or any compounds thereof, or any other poisonous or injurious substance.

spices, smoke, oils, or rendered fat. If they bear names descriptive of kind, composition, or origin, they correspond thereto and when bearing such descriptive names, if force or flavoring meats are used, the kind and quantity thereof are made known.

Par. 2. Sausage, sausage meat is a comminuted meat from neat cattle or swine, or a mixture of such meats, either fresh, salted, pickled or smoked, with added salt and spices and with or without the addition of edible animal fats, blood and sugar, or subsequent smoking. It contains no larger amount of water than the meats from which it is prepared, contain when in their fresh condition, and if it bears a name descriptive of kind, composition, or origin, it corresponds to such descriptive name. All animal tissues used as containers, such as casings, stomachs, etc., are clean and sound and impart to the contents no other substance than salt.

Par. 3. Blood sausage is sausage to which has been added clean, fresh blood from neat cattle or swine in good health at the time of slaughter.

Par. 4. Canned meat is the cooked, fresh meat of fowl, neat cattle, or swine, preserved in hermetically sealed packages.

Par. 5. Corned or cured meat is meat, cured or pickled with dry salt or in brine, with or without the addition of sugar or sirup and (pending further inquiry) saltpeter.

Par. 6. Potted meat is comminuted and cooked meat from those parts of the animal ordinarily used for food in the fresh state, with or without salt and spices, and enclosed in suitable containers hermetically sealed.

Par. 7. Meat loaf is a mixture of comminuted cooked meat, with or without spices, cereals, milk, and eggs, and pressed into a loaf. If it bears a descriptive name, it corresponds thereto.

Par. 8. Mince, mince meat, is a mixture of not less than ten (10) per cent. of cooked, comminuted meat, with chopped suet, apple and other fruit, salt and spices, and with sugar, sirup, or molasses, and with or without vinegar, fresh, concentrated, or fermented fruit juices, or spirituous liquors.

c. Meat Extracts, Meat Peptones, Gelatin, Etc.

Par. 1. Meat extract is the product obtained by extracting fresh meat with boiling water and concentrating the liquid portion by evaporation after the removal of fat, and contains not less than seventy-five (75) per cent. of total solids, of which not over twenty-seven (27) per cent. is ash, and not over twelve (12) per cent. is sodium chloride (calculated from the total chlorine present), not over six-tenths (0.6) per cent. is fat, and not less than eight (8) per cent. is nitrogen. The nitrogenous compounds, contain not less than forty (40) per cent. of meat bases and not less than ten (10) per cent. of kreatin and kreatinin.

Par. 2. Fluid meat extract is identical with meat extract except that it is concentrated to a lower degree, and contains not more than seventy-five (75) and not less than fifty (50) per cent. of total solids.

Par. 3. Bone extract is the product obtained by extracting clean, fresh, trimmed bones of animals in good health at the time of slaughter with boiling water and concentrating the liquid portion by evaporation, after removal of fat, and contains not less than seventy-five (75) per cent. of total solids.

Par. 4. Fluid bone extract is identical with bone extract except that it is concentrated to a lower degree, and contains not more than seventy-five (75) and not less than fifty (50) per cent. of total solids.

Par. 5. Meat juice is the fluid portion of muscle fiber, obtained by pressure or otherwise, and may be concentrated by evaporation at a temperature below the coagulating point of the soluble proteids. The solids contain not more than fifteen (15) per cent. of ash, not more than two and five-tenths (2.5) per cent. of sodium chlorid (calculated from the total chlorine present), not more than four (4) nor less than (2) per cent. of phosphoric acid (P_2O_5), and not less than twelve (12) per cent. of nitrogen. The nitrogenous bodies contain not less than thirty-five (35) per cent. of coagulable proteids and not more than forty (40) per cent. of meat bases.

Par. 6. Peptones are products prepared by the digestion of proteid material by means of enzymes or otherwise, and contain not less than ninety (90) per cent. of proteoses and peptones.

Par. 7. Gelatin (edible gelatin) is the purified, dried, inodorous product of the hydrolysis, by treatment with boiling water, of certain tissues, as skin, ligaments, and bones, from sound animals, and contains not more than two (2) per cent. of ash and not less than fifteen (15) per cent. of nitrogen.

d. *Lard.*

Par. 1. Lard is the rendered fresh fat from hogs in good health at the time of slaughter, is clean, free from rancidity, and contains, necessarily incorporated in the process of rendering, not more than one (1) per cent. of substances, other than fatty acids and fat.

Par. 2. Leaf lard is lard rendered at moderately high temperature from the internal fat of the abdomen of the hog, excluding that adherent to the intestines, and has an iodine number not greater than sixty (60).

Par. 3. Neutral lard is lard rendered at low temperatures.

SECTION B.—MILK AND ITS PRODUCTS.

a. *Milks.*

Par. 1. Milk is the fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains not less than eight and one-half (8.5) per cent. of solids not fat, and not less than three and one-quarter (3.25) per cent. of milk fat.

Par. 2. Blended milk is milk modified in its composition so as to have a definite and stated percentage of one or more of its constituents.

Par. 3. Skim milk is milk from which a part or all of the cream has been removed and contains not less than nine and one-quarter (9.25) per cent. of milk solids.

Par. 4. Pasteurized milk is milk that has been heated below boiling but sufficiently to kill most of the active organisms present and immediately cooled to 50° Fahr. or lower.

Par. 5. Sterilized milk is milk that has been heated at the temperature of boiling water or higher for a length of time sufficient to kill all organisms present.

Par. 6. Condensed milk, evaporated milk, is milk from which a considerable portion of water has been evaporated and contains not less than twenty-eight (28) per cent. of milk solids of which not less than twenty-seven and five-tenths (27.5) per cent. is milk fat.

Par. 7. Sweetened condensed milk is milk from which a considerable portion of water has been evaporated and to which sugar (sucrose) has been added, and contains not less than twenty-eight (28) per cent. of milk solids, of which not less than twenty-seven and five-tenths (27.5) per cent. is milk fat.

Par. 8. Condensed skim milk is skim milk from which a considerable portion of water has been evaporated.

Par. 9. Buttermilk is the product that remains when butter is removed from milk or cream in the process of churning.

Par. 10. Goat's milk, ewe's milk, et cetera, are the fresh, clean, lacteal secretions, free from colostrum, obtained by the complete milking of healthy animals other than cows, properly fed and kept, and conform in name to the species of animal from which they are obtained.

b. *Cream.*

Par. 1. Cream is that portion of milk, rich in milk fat, which rises to the surface of milk on standing, or is separated from it by centrifugal force, is fresh and clean and contains not less than eighteen (18) per cent. of milk fat.

Par. 2. Evaporated cream, clotted cream, is cream from which a considerable portion of water has been evaporated.

c. *Milk Fat or Butter Fat.*

Par. 1. Milk fat, butter fat, is the fat of milk and has a Reichert-Meissl number not less than twenty-four (24) and a specific gravity not less than 0.905 $\left(\begin{smallmatrix} 40^{\circ}\text{C.} \\ 40^{\circ}\text{C.} \end{smallmatrix}\right)$

d. *Butter.*

Par. 1. Butter is the clean, non-rancid product made by gathering in any manner the fat of fresh or ripened milk or cream into a mass, which also contains a small portion of the other milk constituents, with or without salt, and contains not less than eighty-two and five-tenths (82.5) per cent. of milk fat. By acts of Congress approved August 2, 1886, and May 9, 1902, butter may also contain added coloring matter.

Par. 2. Renovated butter, process butter, is the product made by melting butter and reworking, without the addition or use of chemicals or any substances except milk, cream, or salt, and contains not more than sixteen (16) per cent. of water and at least eighty-two and five-tenths (82.5) per cent. of milk fat.

e. *Cheese.*

Par. 1. Cheese is the sound, solid, and ripened product made from milk or cream by coagulating the casein thereof with rennet or lactic acid, with or without the addition of ripening ferments and seasoning, and con-

taius, in the water-free substance, not less than fifty (50) per cent. of milk fat. By act of Congress, approved June 6, 1896, cheese may also contain added coloring matter.

Par. 2. Skim milk cheese is the sound, solid and ripened product, made from skim milk by coagulating the casein thereof with rennet or lactic acid, with or without the addition of ripening ferments and seasoning.

Par. 3. Goat's milk cheese, ewe's milk cheese, et cetera, are the sound, ripened products made from the milks of the animals specified, by coagulating the casein thereof with rennet or lactic acid, with or without the addition of ripening ferments and seasoning.

f. Ice Cream.

Ice Cream is a frozen product containing not less than 8 per cent. of butter fat and 18 per cent. of milk solids, with the addition of sugar (sucrose) and with or without natural flavoring and not to exceed seven-tenths of one per cent. of gelatine or vegetable gums.

Fruits, nuts, candied and preserved fruits and nuts, chocolate and other similar products shall be classed as flavorings, and ice cream containing such ingredients shall conform to the standard above specified.

g. Miscellaneous Milk Products.

Par. 1. Whey is the product remaining after the removal of fat and casein from milk in the process of cheese-making.

Par. 2. Kumiss is the product made by the alcoholic fermentation of mare's or cow's milk.

SUBDIVISION II.—VEGETABLE PRODUCTS.

SECTION A—GRAIN PRODUCTS.

a. Grains and Meals.

Par. 1. Grain is the fully matured, clean, sound, air-dry seed of wheat, maize, rice, oats, rye, buckwheat, barley, sorghum, millet, or spelt.

Par. 2. Meal is the clean, sound product made by grinding grain.

Par. 3. Flour is the fine, clean, sound product made by bolting wheat meal and contains not more than thirteen and one-half (13.5) per cent. of moisture, not less than one and twenty-five hundredths (1.25) per cent. of nitrogen, nor more than one (1) per cent. of ash, and not more than fifty hundredths (0.50) per cent. of fiber.

Par. 4. Graham flour is unbolted wheat meal.

Par. 5. Gluten flour is the clean, sound product made from flour by the removal of starch and contains not less than five and six-tenths (5.6) per cent. of nitrogen and not more than ten (10) per cent. of moisture.

Par. 6. Maize meal, corn meal, Indian corn meal, is meal made from the sound maize grain and contains not more than fourteen (14) per cent. of moisture, not less than one and twelve hundredths (1.12) per cent. of nitrogen, and not more than one and six-tenths (1.6) per cent. of ash.

Par. 7. Rice is the hulled, or hulled and polished grain of *Oryza sativa*.

Par. 8. Oatmeal is meal made from hulled oats and contains not more than twelve (12) per cent. of moisture, not more than one and five-tenths (1.5) per cent. of crude fiber, not less than two and twenty-four hundredths (2.24) per cent. nitrogen, and not more than two and two-tenths (2.2) per cent. of ash.

Par. 9. Rye flour is the fine, clean, sound product made by bolting rye meal and contains not more than thirteen and one-half (13.5) per cent. of moisture, not less than one and thirty-six hundredths (1.36) per cent. of nitrogen, and not more than one and twenty-five hundredths (1.25) per cent. of ash.

Par. 10. Buckwheat flour is bolted buckwheat meal and contains not more than twelve (12) per cent. of moisture, not less than one and twenty-eight hundredths (1.28) per cent. of nitrogen, and not more than one and seventy-five hundredths (1.75) per cent. of ash.

SECTION B.—FRUIT AND VEGETABLES.

a. *Fruit and Fruit Products.*

(Except fruit juices, fresh, sweet and fermented, and vinegars.)

Par. 1. Fruits are the clean, sound, edible, fleshy fructifications of plants, distinguished by their sweet, acid, and ethereal flavors.

Par. 2. Dried fruit is the clean, sound product made by drying mature, properly prepared, fresh fruit in such a way as to take up no harmful substance, and conforms in name to the fruit used in its preparation; sun-dried fruit is dried fruit made by drying without the use of artificial means; evaporated fruit is dried fruit made by drying with the use of artificial means.

Par. 3. Evaporated apples are evaporated fruit made from peeled and cored apples, and contains not more than twenty-seven (27) per cent. of moisture determined by the usual commercial method of drying for four (4) hours at the temperature of boiling water.

Par. 4. Canned fruit is the sound product made by sterilizing clean, sound, properly matured and prepared fresh fruit, by heating, with or without sugar (sucrose) and spices, and keeping in suitable, clean, hermetically sealed containers, and conforms in name to the fruit used in its preparation.

Par. 5. Preserve is the sound product made from clean, sound, properly matured and prepared fresh fruit and sugar (sucrose) sirup, with or without spices or vinegar, and conforms in name to that of the fruit used, and in its preparation not less than forty-five (45) pounds of fruit are used to each fifty-five (55) pounds of sugar.

Par. 6. Honey preserve is preserve in which honey is used in place of sugar (sucrose) sirup.

Par. 7. Glucose preserve is preserve in which a glucose product is used in place of sugar (sucrose) sirup.

Par. 8. Jam, marmalade, is the sound product made from clean, sound, properly matured and prepared fresh fruit and sugar (sucrose), with or without spices or vinegar, by boiling to a pulpy or semisolid consistence, and conforms in name to the fruit used, and in its preparation not less than forty-five (45) pounds of fruit are used to each fifty-five (55) pounds of sugar.

Par. 9. Glucose jam, glucose marmalade, is jam in which a glucose product is used in place of sugar (sucrose).

Par. 10. Fruit butter is the sound product made from fruit juice and clean, sound, properly matured and prepared fruit, evaporated to a semi-solid mass of homogeneous consistence, with or without the addition of sugar and spices or vinegar, and conforms in name to the fruit used in its preparation.

Par. 11. Glucose fruit butter is fruit butter in which a glucose product is used in place of sugar (sucrose).

Par. 12. Jelly is the sound, semisolid, gelatinous product made by boiling clean, sound, properly matured and prepared fresh fruit with water, concentrating the expressed and strained juice, to which sugar (sucrose) is added, and conforms in name to the fruit used in its preparation.

Par. 13. Glucose jelly is jelly in which a glucose product is used in place of sugar (sucrose).

b. Vegetables and Vegetable Products.

Par. 1. Vegetables are the succulent, clean, sound, edible parts of herbaceous plants used for culinary purposes.

Par. 2. Dried vegetables are the clean, sound products made by drying properly matured and prepared vegetables in such a way as to take up no harmful substance, and conform in name to the vegetables used in their preparation; sun-dried vegetables are dried vegetables made by drying without the use of artificial means; evaporated vegetables are dried vegetables made by drying with the use of artificial means.

Par. 3. Canned vegetables are sound, properly matured and prepared fresh vegetables, with or without salt, sterilized by heat, with or without previous cooking in vessels from which they take up no metallic substance, kept in suitable, clean, hermetically sealed containers, are sound and conform in name to the vegetables used in their preparation.

Par. 4. Pickles are clean, sound, immature cucumbers, properly prepared, without taking up any metallic compound other than salt, and preserved in any kind of vinegar, with or without spices; pickled onions, pickled beets, pickled beans and other pickled vegetables are vegetables prepared as described above and conform in name to the vegetables used.

Par. 5. Salt pickles are clean, sound, immature cucumbers, preserved in a solution of common salt, with or without spices.

Par. 6. Sweet pickles are pickled cucumbers or other vegetables in the preparation of which sugar (sucrose) is used.

Par. 7. Sauerkraut is clean, sound, properly prepared cabbage, mixed with salt, and subjected to fermentation.

Par. 8. Catchup (ketchup, catsup) is the clean, sound product made from the properly prepared pulp of clean, sound, fresh, ripe tomatoes, with spices and with or without sugar and vinegar; mushroom catchup, walnut catchup, et cetera, are catchups made as above described, and conform in name to the substances used in their preparation.

SECTION C.—SUGARS AND RELATED SUBSTANCES.

a. Sugar and Sugar Products.

Par. 1. Sugar is the product chemically known as sucrose (saccharose) chiefly obtained from sugar cane, sugar beets, sorghum, maple, and palm.

Par. 2. Granulated loaf, cut, milled, and powdered sugars are different forms of sugar and contain at least ninety-nine and five-tenths (99.5) per cent. of sucrose.

Par. 3. Maple sugar is the solid product resulting from the evaporation of maple sap, and contains, in the water-free substance, not less than sixty-five one hundredths (0.65) per cent. of maple sugar ash.

Par. 4. Massecuite, melada, mush sugar, and concrete are products made by evaporating the purified juice of a sugar-producing plant, or a solution of sugar, to a solid or semi-solid consistence, and in which the sugar chiefly exists in a crystalline state.

b. Molasses and Refiners' Sirup.

Par. 1. Molasses is the product left after separating the sugar from massecuite, melada, mush sugar, or concrete, and contains not more than twenty-five (25) per cent. of water and not more than five (5) per cent. of ash.

Par. 2. Refiners' sirup, treacle, is the residual liquid product obtained in the process of refining raw sugars and contains not more than twenty-five (25) per cent. of water and not more than eight (8) per cent. of ash.

c. Sirups.

Par. 1. Sirup is the sound product made by purifying and evaporating the juice of a sugar-producing plant without removing any of the sugar.

Par. 2. Sugar-cane sirup is sirup made by the evaporation of the juice of the sugar-cane or by the solution of sugar-cane concrete, and contains not more than thirty (30) per cent. of water and not more than two and five-tenths (2.5) per cent. of ash.

Par. 3. Sorghum sirup is sirup made by the evaporation of sorghum juice or by the solution of sorghum concrete, and contains not more than thirty (30) per cent. of water and not more than two and five-tenths (2.5) per cent. of ash.

Par. 4. Maple sirup is sirup made by the evaporation of maple sap or by the solution of maple concrete, and contains not more than thirty-two (32) per cent. of water and not less than forty-five hundredths (0.45) per cent. of maple sirup ash.

Par. 5. Sugar sirup is the product made by dissolving sugar to the consistence of a sirup and contains not more than thirty-five (35) per cent. of water.

d. Glucose Products.

Par. 1. Starch sugar is the solid product made by hydrolyzing starch or a starch-containing substance until the greater part of the starch is converted into dextrose. Starch sugar appears in commerce in two forms,

anhydrous starch sugar and hydrous starch sugar. The former, crystallized without water of crystallization, contains not less than ninety-five (95) per cent. of dextrose and not more than eight-tenths (0.8) per cent. of ash. The latter, crystallized with water of crystallization, is of two varieties—70 sugar, also known as brewers' sugar, contains not less than seventy (70) per cent. of dextrose and not more than eight-tenths (0.8) per cent. of ash; 80 sugar, climax or acme sugar, contains not less than eighty (80) per cent. of dextrose and not more than one and one-half (1.5) per cent. of ash.

The ash of all these products consists almost entirely of chlorids and sulphates.

Par. 2. Glucose, mixing glucose, confectioner's glucose, is a thick, sirupy, colorless product made by incompletely hydrolyzing starch, or a starch-containing substance, and decolorizing and evaporating the product. It varies in density from forty-one (41) to forty-five (45) degrees Baumé at a temperature of 100° Fahr. (37.7° C.), and conforms in density, within these limits, to the degree Baumé it is claimed to show, and for a density of forty-one (41) degrees Baumé contains not more than twenty-one (21) per cent., and for a density of forty-five (45) degrees not more than fourteen (14) per cent. of water. It contains on a basis of forty-one (41) degrees Baumé not more than one (1) per cent. of ash, consisting chiefly of chlorids and sulphates.

e. *Candy.*

Par. 1. Candy is a product made from a saccharine substance or substances with or without the addition of harmless coloring, flavoring, or filling materials, and contains no terra alba, barytes, talc, chrome yellow or other mineral substances, or poisonous colors or flavors, or other ingredients deleterious or detrimental to health, or any vinous, malt or spirituous liquor or compound, or narcotic drug.

f. *Honey.*

Par. 1. Honey is the nectar and saccharine exudations of plants gathered, modified, and stored in the comb by honey bees (*Apis mellifica* and *A. dorsata*); is laevo-rotary, contains not more than twenty-five (25) per cent. of water, not more than twenty-five hundredths (0.25) per cent. of ash, and not more than eight (8) per cent. of sucrose.

Par. 2. Comb honey is honey contained in the cells of comb.

Par. 3. Extracted honey is honey which has been separated from the uncrushed comb by centrifugal force or gravity.

Par. 4. Strained honey is honey removed from the crushed comb by straining or other means.

SECTION D.—CONDIMENTS (EXCEPT VINEGAR AND SALT).

a. *Spices.*

Par. 1. Spices are aromatic vegetable substances used for the seasoning of food and from which no portion of any volatile oil or other flavoring principle has been removed, and which are clean, sound and true to name.

Par. 2. Allspice, pimento, is the dried fruit of the *Pimenta pimenta* (L.) Karst., and contains not less than eight (8) per cent. of quercitannic acid¹; not more than six (6) per cent. of total ash, not more than five-tenths (0.5) per cent. of ash insoluble in hydrochloric acid, and not more than twenty-five (25) per cent. of crude fiber.

Par. 3. Anise is the fruit of the *Pimpinella anisum* L.

Par. 4. Bay leaf is the dried leaf of *Laurus nobilis* L.

Par. 5. Capers are the flower buds of *Capparis spinosa* L.

Par. 6. Caraway is the fruit of *Carum carvi* L.

CAYENNE AND RED PEPPERS.

Par. 7. Red pepper is the red, dried, ripe fruit of any species of *Capsicum*.

Par. 8. Cayenne pepper, cayenne, is the dried ripe fruit of *Capsicum frutescens* L., *Capsicum baccatum* L., or some other small-fruited species of *Capsicum*, and contains not less than fifteen (15) per cent. of nonvolatile ether extract; not more than six and five-tenths (6.5) per cent. of total ash; not more than five-tenths (0.5) per cent. of ash insoluble in hydrochloric acid; not more than one and five-tenths (1.5) per cent. of starch, and not more than twenty-eight (28) per cent. of crude fiber.

Par. 9. Paprika is the dried ripe fruit of *Capsicum annuum* L., or some other large-fruited species of *Capsicum*, excluding seeds and stems.

Par. 10. Celery seed is the dried fruit of *Aplium graveolens* L.

Par. 11. Cinnamon is the dried bark of any species of the genus *Cinnamomum* from which the outer layers may or may not have been removed.

Par. 12. True cinnamon is the dried inner bark of *Cinnamomum zeylanicum* Breyne.

Par. 13. Cassia is the dried bark of various species of *Cinnamomum*, other than *Cinnamomum zeylanicum*, from which the outer layers may or may not have been removed.

Par. 14. Cassia buds are the dried immature fruit of species of *Cinnamomum*.

Par. 15. Ground cinnamon, ground cassia, is a powder consisting of cinnamon, cassia or cassia buds, or a mixture of these spices and contains not more than six (6) per cent. of total ash and not more than two (2) per cent. of sand.

Par. 16. Cloves are the dried flower buds of *Caryophyllus aromaticus* L., which contain not more than five (5) per cent. of clove stems; not less than ten (10) per cent. of volatile ether extract; not less than twelve (12) per cent. of quercitannic acid²; not more than eight (8) per cent. of total ash; not more than five-tenths (0.5) per cent. of ash insoluble in hydrochloric acid, and not more than ten (10) per cent. of crude fiber.

Par. 17. Coriander is the dried fruit of *Coriandrum sativum* L.

Par. 18. Cumin seed is the fruit of *Cuminum cyminum* L.

Par. 19. Dill seed is the fruit of *Anethum graveolens* L.

Par. 20. Fennel is the fruit of *Foeniculum foeniculum* (L.) Karst.

¹ Calculated from the total oxygen absorbed by the aqueous extract.

² Calculated from the total oxygen absorbed by the aqueous extract.

Par. 21. Ginger is the washed and dried or decorticated and dried rhizome of *Zingiber zingiber* (L.) Karst., and contains not less than forty-two (42) per cent. of starch; not more than eight (8) per cent. of crude fiber, not more than six (6) per cent. of total ash, not more than one (1) per cent. of lime, and not more than three (3) per cent. of ash insoluble in hydrochloric acid.

Par. 22. Limed ginger, bleached ginger, is whole ginger coated with carbonate of lime and contains not more than ten (10) per cent. of ash, not more than four (4) per cent. of carbonate of lime, and conforms in other respects to the standard for ginger.

Par. 23. Horse-radish is the root of *Roripa armoracia* (L.) Hitchcock, either by itself or ground and mixed with vinegar.

Par. 24. Mace is the dried arillus of *Myristica fragrans* Houttuyn, and contains not less than twenty (20) nor more than thirty (30) per cent. of nonvolatile ether extract, not more than three (3) per cent. of total ash, and not more than five-tenths (0.5) per cent. of ash insoluble in hydrochloric acid, and not more than ten (10) per cent. of crude fiber.

Par. 25. Macassar mace, Papua mace, is the dried arillus of *Myristica argentea* Warb.

Par. 26. Bombay mace is the dried arillus of *Myristica malabarica* Lamarck.

Par. 27. Marjoram is the leaf, flower and branch of *Majorana majorana* (L.) Karst.

Par. 28. Mustard seed is the seed of *Sinapis alba* L. (white mustard), *Brassica nigra* (L.) Koch (black mustard), or *Brassica juncea* (L.) Cosson (black or brown mustard).

Par. 29. Ground mustard is a powder made from mustard seed, with or without the removal of the hulls and a portion of the fixed oil, and contains not more than two and five-tenths (2.5) per cent. of starch and not more than eight (8) per cent. of total ash.

Par. 30. Prepared mustard, German mustard, French mustard, mustard paste, is a paste composed of a mixture of ground mustard seed or mustard flour with salt, spices and vinegar, and calculated free from water, fat and salt, contains not more than twenty-four (24) per cent. of carbohydrates calculated as starch, determined according to the official methods, not more than twelve (12) per cent. of crude fiber nor less than thirty-five (35) per cent. of protein, derived solely from the materials named.

Par. 31. Nutmeg is the dried seed of the *Myristica fragrans* Houttuyn, deprived of its testa, with or without a thin coating of lime, and contains not less than twenty-five (25) per cent. of nonvolatile ether extract, not more than five (5) per cent. of total ash, not more than five-tenths (0.5) per cent. of ash insoluble in hydrochloric acid, and not more than ten (10) per cent. of crude fiber.

Par. 32. Macassar nutmeg, Papua nutmeg, male nutmeg, long nutmeg, is the dried seed of *Myristica argentea* Warb. deprived of its testa.

PEPPER.

Par. 33. Black pepper is the dried immature berry of *Piper nigrum* L. and contains not less than six (6) per cent. of nonvolatile ether extract, not less than twenty-five (25) per cent. of starch, not more than seven (7)

per cent. of total ash, not more than two (2) per cent. of ash insoluble in hydrochloric acid, and not more than fifteen (15) per cent. of crude fiber. One hundred parts of the nonvolatile ether extract contains not less than three and one-quarter (3.25) parts of nitrogen.

Par. 34. Ground black pepper is the product made by grinding the entire berry and contains the several parts of the berry in their normal proportions.

Par. 35. Long pepper is the dried fruit of *Piper longum* L.

Par. 36. White pepper is the dried mature berry of *Piper nigrum* L. from which the outer coating or the outer and inner coatings have been removed, and contains not less than six (6) per cent. of nonvolatile ether extract, not less than fifty (50) per cent. of starch, not more than four (4) per cent. of total ash, not more than five-tenths (0.5) per cent. of ash insoluble in hydrochloric acid, and not more than five (5) per cent. of crude fiber. One hundred parts of the nonvolatile ether extract contains not less than four (4) parts of nitrogen.

Par. 37. Saffron is the dried stigma of *Crocus sativus* L.

Par. 38. Sage is the leaf of *Salvia officinalis* L.

Par. 39. Savory, summer savory, is the leaf, blossoms and branch of *Satureja hortensis* L.

Par. 40. Thyme is the leaf and tip of blooming branches of *Thymus vulgaris* L.

b. *Flavoring Extracts.*

Par. 1. A flavoring extract³ is a solution in ethyl alcohol of proper strength of the sapid and odorous principles derived from an aromatic plant or parts of the plant, with or without its coloring matter, and conforms in name to the plant used in its preparation.

Par. 2. Almond extract is the flavoring extract prepared from oil of bitter almonds, free from hydrocyanic acid, and contains not less than one (1) per cent. by volume of oil of bitter almonds.

Par. 2a. Oil of bitter almonds, commercial, is the volatile oil obtained from the seed of the bitter almond (*Amygdalus communis* L.), the apricot (*Prunus armeniaca* L.), or the peach (*Amygdalus persica* L.).

Par. 3. Anise extract is the flavoring extract prepared from oil of anise, and contains not less than three (3) per cent. by volume of oil of anise.

Par. 3a. Oil of anise is the volatile oil obtained from the anise seed.

Par. 4. Celery seed extract is the flavoring extract prepared from celery seed or the oil of celery seed, or both, and contains not less than three-tenths (0.3) per cent. by volume of oil of celery seed.

Par. 4a. Oil of celery seed is the volatile oil obtained from celery seed.

Par. 5. Cassia extract is the flavoring extract prepared from oil of cassia and contains not less than two (2) per cent. by volume of oil of cassia.

Par. 5a. Oil of cassia is the lead-free volatile oil obtained from the leaves and bark of *Cinnamomum cassia* Bl., and contains not less than seventy-five (75) per cent. by weight of cinnamic aldehyde.

³ The flavoring extracts herein described are intended solely for food purposes and are not to be confounded with similar preparations described in the Pharmacopœia for medicinal purposes.

Par. 6. Cinnamon extract is the flavoring extract prepared from oil of cinnamon, and contains not less than two (2) per cent. by volume of oil of cinnamon.

Par. 6a. Oil of cinnamon is the lead-free volatile oil obtained from the bark of the Ceylon cinnamon (*Cinnamomum zeylanicum* Breyn); and contains not less than sixty-five (65) per cent. by weight of cinnamic aldehyde and not more than ten (10) per cent. by weight of eugenol.

Par. 7. Clove extract is the flavoring extract prepared from oil of cloves, and contains not less than two (2) per cent. by volume of oil of cloves.

Par. 7a. Oil of cloves is the lead-free volatile oil obtained from cloves.

Par. 8. Ginger extract is the flavoring extract prepared from ginger, and contains in each one hundred (100) cubic centimeters, the alcohol-soluble matters from not less than twenty (20) grams of ginger.

Par. 9. Lemon extract is the flavoring extract prepared from oil of lemon or from lemon peel, or both, and contains not less than five (5) per cent. by volume of oil of lemon.

Par. 9a. Oil of lemon is the volatile oil obtained, by expression or alcoholic solution, from the fresh peel of the lemon (*Citrus limonum* L.). has an optical rotation 25° C., of not less than $+60^{\circ}$ in a 100-millimeter tube, and contains not less than four (4) per cent. by weight of citral.

Par. 10. Terpeneless extract of lemon is the flavoring extract prepared by shaking oil of lemon with dilute alcohol, or by dissolving terpeneless oil of lemon in dilute alcohol, and contains not less than two-tenths (0.2) per cent. by weight of citral derived from oil of lemon.

Par. 10a. Terpeneless oil of lemon is oil of lemon from which all or nearly all of the terpenes have been removed.

Par. 11. Nutmeg extract is the flavoring extract prepared from oil of nutmeg, and contains not less than two (2) per cent. by volume of oil of nutmeg.

Par. 11a. Oil of nutmeg is the volatile oil obtained from nutmegs.

Par. 12. Orange extract is the flavoring extract prepared from oil of orange, or from orange peel, or both, and contains not less than five (5) per cent. by volume of oil of orange.

Par. 12a. Oil of orange is the volatile oil obtained, by expression or alcoholic solution, from the fresh peel of the orange (*Citrus aurantium* L.) and has an optical rotation (25° C.) of not less than $+95^{\circ}$ in a 100-millimeter tube.

Par. 13. Terpeneless extract of orange is the flavoring extract prepared by shaking oil of orange with dilute alcohol, or by dissolving terpeneless oil of orange in dilute alcohol, and corresponds in flavoring strength to orange extract.

Par. 13a. Terpeneless oil of orange is oil of orange from which all or nearly all of the terpenes have been removed.

Par. 14. Peppermint extract is the flavoring extract prepared from oil of peppermint, or from peppermint, or both, and contains not less than three (3) per cent. by volume of oil of peppermint.

Par. 14a. Peppermint is the leaves and flowering tops of *Mentha piperita* L.

Par. 14b. Oil of peppermint is the volatile oil obtained from peppermint and contains not less than fifty (50) per cent. by weight of menthol.

Par. 15. Rose extract is the flavoring extract prepared from otto of roses, with or without red rose petals, and contains not less than four-tenths (0.4) per cent. by volume of otto of roses.

Par. 15a. Otto of roses is the volatile oil obtained from the petals of *Rosa damascena* Mill., *R. centifolia* L., or *R. moschata* Herrm.

Par. 16. Savory extract is the flavoring extract prepared from oil of savory or from savory, or both, and contains not less than thirty-five hundredths (0.35) per cent. by volume of oil of savory.

Par. 16a. Oil of savory is the volatile oil obtained from savory.

Par. 17. Spearmint extract is the flavoring extract prepared from oil of spearmint or from spearmint, or both, and contains not less than three (3) per cent. by volume of oil of spearmint.

Par. 17a. Spearmint is the leaves and flowering tops of *Mentha spicata* L.

Par. 17b. Oil of spearmint is the volatile oil obtained from spearmint.

Par. 18. Star anise extract is the flavoring extract prepared from oil of star anise, and contains not less than three (3) per cent. by volume of oil of star anise.

Par. 18a. Oil of star anise is the volatile oil distilled from the fruit of the star anise (*Illicium verum* Hook).

Par. 19. Sweet basil extract is the flavoring extract prepared from oil of sweet basil or from sweet basil, or both, and contains not less than one-tenth (0.1) per cent. by volume of oil of sweet basil.

Par. 19a. Sweet basil, basil, is the leaves and tops of *Ocimum basilicum* L.

Par. 19b. Oil of sweet basil is the volatile oil obtained from basil.

Par. 20. Sweet marjoram extract, marjoram extract, is the flavoring extract prepared from the oil of marjoram or from marjoram, or both, and contains not less than one (1) per cent. by volume of oil of marjoram.

Par. 20a. Oil of marjoram is the volatile oil obtained from marjoram.

Par. 21. Thyme extract is the flavoring extract prepared from oil of thyme or from thyme, or both, and contains not less than two-tenths (0.2) per cent. by volume of oil of thyme.

Par. 21a. Oil of thyme is the volatile oil obtained from thyme.

Par. 22. Tonka extract is the flavoring extract prepared from tonka bean, with or without sugar or glycerin, and contains not less than one-tenth (0.1) per cent. by weight of coumarin extracted from the tonka bean, together with a corresponding proportion of the other soluble matters thereof.

Par. 22a. Tonka bean is the seed of *Coumarouna odorata* Aublet (*Dipteryx odorata* (Aubl.) Willd.).

Par. 23. Vanilla extract is the flavoring extract prepared from vanilla bean, with or without sugar or glycerin, and contains in one hundred (100) cubic centimeters the soluble matters from not less than ten (10) grams of the vanilla bean.

Par. 23a. Vanilla bean is the dried, cured fruit of *Vanilla planifolia* Andrews.

Par. 24. Wintergreen extract is the flavoring extract prepared from oil of wintergreen, and contains not less than three (3) per cent. by volume of oil of wintergreen.

Par. 24a. Oil of wintergreen is the volatile oil distilled from the leaves of the *Gaultheria procumbens* L.

c. Edible Vegetable Oils and Fats.

Par. 1. Olive oil is the oil obtained from the sound, mature fruit of the cultivated olive tree (*Olea europaea* L.) and subjected to the usual refining processes; is free from rancidity; has a refractive index (25° C.) not less than one and forty-six hundred and sixty ten-thousandths (1.4690) and not exceeding one and forty-six hundred and eighty ten-thousandths (1.4680); and an iodine number not less than seventy-nine (79) and not exceeding ninety (90).

Par. 2. Virgin olive oil is olive oil obtained from the first pressing of carefully selected, hand-picked olives.

Par. 3. Cotton-seed oil is the oil obtained from the seeds of cotton plants (*Gossypium hirsutum* L., *G. barbadense* L., or *G. herbaceum* L.) and subjected to the usual refining processes; is free from rancidity; has a refractive index (25° C.) not less than one and forty-seven hundred ten-thousandths (1.4700) and not exceeding one and forty-seven hundred and twenty-five ten-thousandths (1.4725); and an iodine number not less than one hundred and four (104) and not exceeding one hundred and ten (110).

Par. 4. "Winter-yellow" cotton-seed oil is expressed cotton-seed oil from which a portion of the stearin has been separated by chilling and pressure, and has an iodine number not less than one hundred and ten (110) and not exceeding one hundred and sixteen (116).

Par. 5. Peanut oil, arachis oil, earthnut oil, is the oil obtained from the peanut (*Arachis hypogaea* L.) and subjected to the usual refining processes; is free from rancidity; has a refractive index (25° C.) not less than one and forty-six hundred and ninety ten-thousandths (1.4690) and not exceeding one and forty-seven hundred and seven ten-thousandths (1.4707); and an iodine number not less than eighty-seven (87) and not exceeding one hundred (100).

Par. 6. "Cold-drawn" peanut oil is peanut oil obtained by pressure without heating.

Par. 7. Sesame oil, gingili oil, teel oil, is the oil obtained from the seeds of the sesame plants (*Sesamum orientale* L. and *S. radiatum* Schum. and Thonn.) and subjected to the usual refining processes; is free from rancidity; has a refractive index (25° C.) not less than one and forty-seven hundred and four ten-thousandths (1.4704) and not exceeding one and forty-seven hundred and seventeen ten-thousandths (1.4717); and an iodine number not less than one hundred and three (103) and not exceeding one hundred and twelve (112).

Par. 8. "Cold-drawn" sesame oil is sesame oil obtained by pressure without heating.

Par. 9. Poppy-seed oil is the oil obtained from the seed of the poppy (*Papaver somniferum* L.) subjected to the usual refining processes and free from rancidity.

Par. 10. White poppy-seed oil, "cold-drawn" poppy-seed oil, is poppy-seed oil of the first pressing without heating.

Par. 11. Coconut oil is the oil obtained from the kernels of the coconut (*Cocos nucifera* L.) and subjected to the usual refining processes and free from rancidity.

Par. 12. Cochin oil is cocoanut oil prepared in Cochin (Malabar).

Par. 13. Ceylon oil is cocoanut oil prepared in Ceylon.

Par. 14. Copra oil is cocoanut oil prepared from copra, the dried kernels of the cocoanut.

Par. 15. Rape-seed oil, colza oil, is the oil obtained from the seeds of the rape plant (*Brassica napus* L.) and subjected to the usual refining processes and free from rancidity.

Par. 16. "Cold-drawn" rape-seed oil is rape-seed oil obtained by the first pressing without heating.

Par. 17. Sunflower oil is the oil obtained from the seeds of the sunflower (*Helianthus annuus* L.) and subjected to the usual refining processes and free from rancidity.

Par. 18. "Cold-drawn" sunflower oil is sunflower oil obtained by the first pressing without heating.

Par. 19. Maize oil, corn oil, is the oil obtained from the germ of the maize (*Zea mays* L.) and subjected to the usual refining processes and free from rancidity.

Par. 20. Cocoa butter, cacao butter, is the fat obtained from roasted sound cocoa beans and subjected to the usual refining processes; is free from rancidity; has a refractive index (40° C.) not less than one and forty-five hundred and sixty-six ten-thousandths (1.4566) and not exceeding one and forty-five hundred and ninety-eight ten-thousandths (1.4598), an iodine number not less than thirty-three (33) and not exceeding thirty-eight (38); and a melting point not lower than 30° C. nor higher than 35° C.

Par. 21. Cotton-seed oil stearin is the solid product made by chilling cotton-seed oil and separating the solid portion by filtration, with or without pressure, and having an iodine number not less than eighty-five (85) and not more than one hundred (100).

SECTION E.—TEA, COFFEE AND COCOA PRODUCTS.

a. *Tea.*

Par. 1. Tea is the leaves and leaf buds of different species of *Thea*, prepared by the usual trade processes of fermenting, drying and firing; meets the provisions of the act of Congress approved March 2, 1897, and the regulations made in conformity therewith (Treasury Department Circular 16, February 6, 1905); conforms in variety and place of production to the name it bears; and contains not less than four (4) nor more than seven (7) per cent. of ash.

b. *Coffee.*

Par. 1. Coffee is the seed of *Coffea arabica* L. or *Coffea liberica* Bull., freed from all but a small portion of its spermoderm, and conforms in variety and place of production to the name it bears.

Par. 2. Roasted coffee is coffee which by the action of heat has become brown and developed its characteristic aroma, and contains not less than ten (10) per cent. of fat and not less than three (3) per cent. of ash.

c. Cocoa and Cocoa Products.

Par. 1. Cocoa beans are the seeds of the cacao tree, *Theobroma cacao* L.

Par. 2. Cocoa nibs, cracked cocoa, is the roasted, broken cocoa bean freed from its shell or husk.

Par. 3. Chocolate, plain chocolate, bitter chocolate, chocolate liquor, bitter chocolate coatings, is the solid or plastic mass obtained by grinding cocoa nibs without the removal of fat or other constituents except the germ, and contains not more than three (3) per cent. of ash insoluble in water, three and fifty hundredths (3.50) per cent. of crude fiber and nine (9) per cent. of starch, and not less than forty-five (45) per cent. of cocoa fat.

Par. 4. Sweet chocolate, sweet chocolate coatings, is chocolate mixed with sugar (sucrose), with or without the addition of cocoa butter, spices or other flavoring materials, and contains in the sugar and fat-free residue no higher percentage of either ash, fiber or starch than is found in the sugar and fat-free residue of chocolate.

Par. 5. Cocoa, powdered cocoa, is cocoa nibs, with or without the germ, deprived of a portion of its fat and finely pulverized, and contains percentages of ash, crude fiber and starch corresponding to those in chocolate after correction for fat removed.

Par. 6. Sweet cocoa, sweetened cocoa, is cocoa mixed with sugar (sucrose), and contains not more than sixty (60) per cent. of sugar (sucrose), and in the sugar and fat-free residue no higher percentage of either ash, crude fiber or starch than is found in the sugar and fat-free residue of chocolate.

SUBDIVISION III.—BEVERAGES.

SECTION A. FRUIT JUICES—FRESH, SWEET AND FERMENTED.

a. Fresh Fruit Juices.

Par. 1. Fresh fruit juices are the clean, unfermented liquid products obtained by the first pressing of fresh, ripe fruits, and correspond in name to the fruits from which they are obtained.

Par. 2. Apple juice, apple must, sweet cider, is the fresh fruit juice obtained from apples, the fruit of *Pyrus malus*, has a specific gravity (20° C.) not less than 1.0415 nor greater than 1.0690; and contains in one hundred (100) cubic centimeters (20° C.) not less than six (6) grams, and not more than twenty (20) grams of total sugars, in terms of reducing sugars, not less than twenty-four (24) centigrams nor more than sixty (60) centigrams of apple ash, which contains not less than fifty (50) per cent. of potassium carbonate.

Par. 3. Grape juice, grape must, is the fresh fruit juice obtained from grapes (*Vitis* species), has a specific gravity (20° C.) not less than 1.0400 and not exceeding 1.1240; and contains in one hundred (100) cubic centi-

meters (20° C.) not less than seven (7) grams nor more than twenty-eight (28) grams of total sugars, in terms of reducing sugars, not less than twenty (20) centigrams and not more than fifty-five (55) centigrams of grape ash, and not less than fifteen (15) milligrams nor more than seventy (70) milligrams of phosphoric acid (P_2O_5).

Par. 4. Lemon juice is the fresh fruit juice obtained from lemon, the fruit of *Citrus limonum* Risso, has a specific gravity (20° C.) not less than 1.030 and not greater than 1.040; and contains not less than ten (10) per cent. of solids and not less than seven (7) per cent. of citric acid.

Par. 5. Pear juice, pear must, sweet perry, is the fresh fruit juice obtained from pears, the fruit of *Pyrus communis* or *P. sinensis*.

b. *Sterilized Fruit Juices.*

Par. 1. Sterilized fruit juices are the products obtained by heating fresh fruit juices sufficiently to kill all the organisms present, and correspond in name to the fruits from which they are obtained.

c. *Concentrated Fruit Juices.*

Par. 1. Concentrated fruit juices are clean, sound fruit juices from which a considerable portion of the water has been evaporated, and correspond in name to the fruits from which they are obtained.

d. *Sweet Fruit Juices, Sweetened Fruit Juices, Fruit Sirups.*

Par. 1. Sweet fruit juices, sweetened fruit juices, fruit sirups, are the products obtained by adding sugar (sucrose) to fresh fruit juices, and correspond in name to the fruits from which they are obtained.

Par. 2. Sterilized fruit sirups are the products obtained by the addition of sugar (sucrose) to fresh fruit juices and heating them sufficiently to kill all the organisms present, and correspond in name to the fruits from which they are obtained.

e. *Fermented Fruit Juices.*

Par. 1. Wine is the product made by the normal alcoholic fermentation of the juice of sound, ripe grapes, and the usual cellar treatment, and contains not less than seven (7) nor more than sixteen (16) per cent. of alcohol, by volume, and in one hundred (100) cubic centimeters (20° C.) not more than one-tenth (0.1) gram of sodium chlorid nor more than two-tenths (0.2) gram of potassium sulphate; and for red wine not more than fourteen hundredths (0.14) gram, and for white wine not more than twelve hundredths (0.12) gram of volatile acids produced by fermentation and calculated as acetic acid. Red wine is wine containing the red coloring matter of the skins of grapes. White wine is wine made from white grapes or the expressed fresh juice of other grapes.

Par. 2. Dry wine is wine in which the fermentation of the sugars is practically complete and which contains in one hundred (100) cubic centimeters (20° C.) less than one (1) gram of sugars, and for dry red wine not less than sixteen hundredths (0.16) gram of grape ash and not less than

one and six tenths (1.6) grams of sugar-free grape solids, and for dry white wine not less than thirteen hundredths (0.13) gram of grape ash and not less than one and four tenths (1.4) grams of sugar-free grape solids.

Par. 3. Fortified dry wine is dry wine to which brandy has been added but which conforms in all other particulars to the standard of dry wine.

Par. 4. Sweet wine is wine in which the alcoholic fermentation has been arrested, and which contains in one hundred (100) cubic centimeters (20° C.) not less than one (1) gram of sugars, and for sweet red wine not less than sixteen hundredths (0.16) gram of grape ash, and for sweet white wine not less than thirteen hundredths (0.13) gram of grape ash.

Par. 5. Fortified sweet wine is sweet wine to which wine spirits have been added. By act of Congress "sweet wine" used for making fortified sweet wine and "wine spirits" used for such fortification are defined as follows (sec. 43, act of October 1, 1890, 26 Stat., 507, as amended by section 68, act of August 27, 1894, 28 Stat., 509, and further amended by act of Congress approved June 7, 1906): "That the wine spirits mentioned in section 42 of this act is the product resulting from the distillation of fermented grape juice to which water may have been added prior to, during or after fermentation, for the sole purpose of facilitating the fermentation and economical distillation thereof, and shall be held to include the products from grapes or their residues, commonly known as grape brandy; and the pure sweet wine, which may be fortified free of tax, as provided in said section, is fermented grape juice only, and shall contain no other substance whatever introduced before, at the time of or after fermentation, except as herein expressly provided; and such sweet wine shall contain not less than four per centum of saccharine matter, which saccharine strength may be determined by testing with Balling's saccharometer or must scale such sweet wine, after the evaporation of the spirits contained therein, and restoring the sample tested to original volume by addition of water: Provided, That the addition of pure boiled or condensed grape must or pure crystallized cane or beet sugar or pure anhydrous sugar to the pure grape juice aforesaid, or the fermented product of such grape juice prior to the fortification provided by this act for the sole purpose of perfecting sweet wine according to commercial standard, or the addition of water in such quantities only as may be necessary in the mechanical operation of grape conveyers, crushers and pipes leading to fermenting tanks, shall not be excluded by the definition of pure sweet wine aforesaid: Provided, however, That the cane or beet sugar, or pure anhydrous sugar, or water so used shall not in either case be in excess of ten (10) per centum of the weight of the wine to be fortified under this rule: And provided further, That in the addition of water herein authorized shall be under such regulations and limitations as the commissioner of internal revenue, with the approval of the secretary of the treasury, may from time to time prescribe; but in no case shall such wines to which water has been added be eligible for fortification under the provisions of this rule where the same, after fermentation and before fortification, have an alcoholic strength of less than five per centum of their volume."

Par. 6. Sparkling wine is wine in which the after part of the fermentation is completed in the bottle, the sediment being disgorged and its place supplied by wine or sugar liquor, and which contains in one hundred (100)

cubic centimeters (20° C.) not less than twelve hundredths (0.12) gram of grape ash.

Par. 7. Modified wine, ameliorated wine, corrected wine, is the product made by the alcoholic fermentation, with the usual cellar treatment, of a mixture of the juice of sound, ripe grapes with sugar (sucrose), or a sirup containing not less than sixty-five (65) per cent. of sugar (sucrose), and in quantity not more than enough to raise the alcoholic strength after fermentation to eleven (11) per cent. by volume.

Par. 8. Raisin wine is the product made by the alcoholic fermentation of an infusion of dried or evaporated grapes or of a mixture of such infusion or of raisins with grape juice.

Par. 9. Cider, hard cider, is the product made by the normal alcoholic fermentation of apple juice, and the usual cellar treatment, and contains not more than seven (7) per cent. by volume of alcohol, and in one hundred (100) cubic centimeters of the cider not less than two (2) grams nor more than twelve (12) grams of solids, not more than eight (8) grams of sugars, in terms of reducing sugars, and not less than twenty (20) centigrams nor more than forty (40) centigrams of cider ash.

Par. 10. Sparkling cider, champagne cider, is cider in which the after part of the fermentation is completed in closed containers, with or without the addition of cider or sugar liquor, and contains in one hundred (100) cubic centimeters not less than twenty (20) centigrams of cider ash.

SECTION B. MALT LIQUORS.

Par. 1. Malt liquor is a beverage made by the alcoholic fermentation of an infusion, in potable water, of barley malt and hops, with or without unmalted grains or decorticated and degerminated grains.

Par. 2. Beer is a malt liquor produced by bottom fermentation, and contains in one hundred (100) cubic centimeters (20° C.) not less than five (5) grams of extractive matter and sixteen one-hundredths (0.16) gram of ash, chiefly potassium phosphate, and not less than two and twenty-five one-hundredths (2.25) grams of alcohol.

Par. 3. Lager beer, stored beer, is beer which has been stored in casks for a period of at least three months, and contains in one hundred (100) cubic centimeters (20° C.) not less than five (5) grams of extractive matter and sixteen one-hundredths (0.16) gram of ash, chiefly potassium phosphate, and not less than two and fifty one-hundredths (2.50) grams of alcohol.

Par. 4. Malt beer is beer made of an infusion, in potable water, of barley malt and hops, and contains in one hundred (100) cubic centimeters (20° C.) not less than five (5) grams of extractive matter, not less than two tenths (0.2) gram of ash, chiefly potassium phosphate, nor less than two and twenty-five one-hundredths (2.25) grams of alcohol, nor less than four tenths (0.4) gram of crude protein (nitrogen X 6.25).

Par. 5. Ale is a malt liquor produced by top fermentation, and contains in one hundred (100) cubic centimeters (20° C.) not less than two and seventy-five one-hundredths (2.75) grams of alcohol nor less than five (5) grams of extract, and not less than sixteen one-hundredths (0.16) gram of ash, chiefly potassium phosphate.

Par. 6. Porter and stout are varieties of malt liquor made in part from highly roasted malt.

SECTION C. SPIRITUOUS LIQUORS.

Par. 1. Distilled spirit is the distillate obtained from a fermented mash of cereals, molasses, sugars, fruits or other fermentable substances, and contains all the volatile flavors, essential oils and other substances derived directly from the materials used, and the higher alcohols, ethers, acids and other volatile bodies congeneric with ethyl alcohol produced during fermentation, which are carried over at the ordinary temperature of distillation and the principal part of which are higher alcohols estimated as amyllic.

Par. 2. Alcohol, cologne spirit, neutral spirit, velvet spirit or silent spirit is distilled spirit from which all, or practically all, of its constituents except ethyl alcohol and water are separated, and contains not less than ninety-four and nine-tenths (94.9) per cent. (189.8 proof) by volume of ethyl alcohol.

Par. 3. New whisky is the properly distilled spirit from the properly prepared and properly fermented mash of malted grain, or of grain the starch of which has been hydrolyzed by malt; it has an alcoholic strength corresponding to the excise laws of the various countries in which it is produced, and contains in one hundred (100) liters of proof spirit not less than one hundred (100) grams of the various substances other than ethyl alcohol derived from the grain from which it is made, and of those produced during fermentation, the principal part of which consists of higher alcohols estimated as amyllic.

Par. 4. Rye whisky is whisky in the manufacture of which rye, either in a malted condition or with sufficient barley or rye malt to hydrolyze the starch, is the only grain used.

Par. 5. Corn whisky is whisky made from malted Indian corn or of Indian corn the starch of which has been hydrolyzed by barley malt.

Par. 6. Blended whisky is a mixture of two or more whiskies.

Par. 7. Scotch whisky is whisky made in Scotland solely from barley malt, in the drying of which peat has been used. It contains in one hundred (100) liters of proof spirit not less than one hundred and fifty (150) grams of the various substances prescribed for whisky exclusive of those extracted from the cask.

Par. 8. Irish whisky is whisky made in Ireland, and conforms in the proportions of its various ingredients to Scotch whisky, save that it may be made of the same materials as prescribed for whisky, and the malt used is not dried over peat.

Par. 9. New rum is properly distilled spirit made from the properly fermented, clean, sound juice of the sugar cane, the clean, sound massecuite made therefrom, clean, sound molasses from the massecuite, or any sound, clean intermediate product save sugar, and contains in one hundred (100) liters of proof spirit not less than one hundred (100) grams of the volatile flavors, oils and other substances derived from the materials of which it is made, and of the substances congeneric with the ethyl alcohol produced during fermentation, which are carried over at the ordinary temperatures of distillation, the principal part of which is higher alcohols estimated as amyllic.

Par. 10. Rum (potable rum) is new rum stored not less than four (4) years in wood without any artificial heat save that which may be imparted

by warming the storehouse to the usual temperature, and contains in one hundred (100) liters of proof spirit not less than one hundred and seventy-five (175) grams of the substances found in new rum save as they are changed or eliminated by storage, and of those produced as secondary bodies during aging; and in addition thereto the substance extracted from the casks. It contains, when prepared for consumption as permitted by the regulations of the Bureau of Internal Revenue, not less than forty-five (45) per cent. by volume of ethyl alcohol, and if no statement is made concerning its alcoholic strength it contains not less than fifty (50) per cent. by volume of ethyl alcohol as prescribed by law.

Par. 11. New brandy is a properly distilled spirit made from wine, and contains in one hundred (100) liters of proof spirit not less than one hundred (100) grams of the volatile flavors, oils and other substances derived from the material from which it is made, and of the substances congeneric with ethyl alcohol produced during fermentation and carried over at the ordinary temperature of distillation, the principal part of which consists of the higher alcohols estimated as amyllic.

Par. 12. Brandy (potable brandy) is new brandy stored in wood for not less than four (4) years without any artificial heat save that which may be imparted by warming the storehouse to the usual temperature, and contains in one hundred (100) liters of proof spirit not less than one hundred and fifty (150) grams of the substances found in new brandy save as they are changed or eliminated by storage, and of those produced as secondary bodies during aging; and in addition thereto the substances extracted from the casks in which it has been stored. It contains, when prepared for consumption as permitted by the regulations of the Bureau of Internal Revenue, not less than forty-five (45) per cent. by volume of ethyl alcohol, and if no statement is made concerning its alcoholic strength it contains not less than fifty (50) per cent. by volume of ethyl alcohol as prescribed by law.

Par. 13. Cognac, cognac brandy, is brandy produced in the departments of the Charente and Charente Inferieure, France, from wine produced in those departments.

SUBDIVISION IV.—VINEGAR.

Par. 1. Vinegar, elder vinegar, apple vinegar, is the product made by the alcoholic and subsequent acetous fermentations of the juices of apples, is laevo-rotatory, and contains not less than four (4) grams of acetic acid, not less than one and six-tenths (1.6) grams of apple solids, of which not more than fifty (50) per cent. are reducing sugars, and not less than twenty-five hundredths (0.25) gram of apple ash in one hundred (100) cubic centimeters (20° C.); and the water soluble ash from one hundred (100) cubic centimeters (20° C.) of the vinegar contains not less than ten (10) milligrams of phosphoric acid (P_2O_5), and requires not less than thirty (30) cubic centimeters of decinormal acid to neutralize its alkalinity.

Par. 2. Wine vinegar, grape vinegar, is the product made by the alcoholic and subsequent acetous fermentations of the juice of grapes and contains in one hundred (100) cubic centimeters (20° C.) not less than four (4) grams of acetic acid, not less than one (1) gram of grape solids and not less than thirteen hundredths (0.13) gram of grape ash.

Par. 3. Malt vinegar is the product made by the alcoholic and subsequent acetous fermentations, without distillation, of an infusion of barley malt or cereals whose starch has been converted by malt, is dextro-rotatory and contains in one hundred (100) cubic centimeters (20° C.) not less than four (4) grams of acetic acid, not less than two (2) grams of solids and not less than two-tenths (0.2) gram of ash; and the water-soluble ash from one hundred (100) cubic centimeters (20° C.) of the vinegar contains not less than nine (9) milligrams of phosphoric acid (P_2O_5), and requires not less than four (4) cubic centimeters of decinormal acid to neutralize its alkalinity.

Par. 4. Sugar vinegar is the product made by the alcoholic and subsequent acetous fermentations of solutions of sugar, sirup, molasses or refiners' sirup, and contains in one hundred (100) cubic centimeters (20° C.) not less than four (4) grams of acetous acid.

Par. 5. Glucose vinegar is the product made by the alcoholic and subsequent acetous fermentations of solutions of starch sugar or glucose, is dextro-rotatory, and contains in one hundred (100) cubic centimeters (20° C.) not less than four (4) grams of acetic acid.

Par. 6. Spirit vinegar, distilled vinegar, grain vinegar, is the product made by the acetous fermentation of dilute distilled alcohol, and contains in one hundred (100) cubic centimeters (20° C.) not less than four (4) grams of acetic acid.

SUBDIVISION V.—SALT.

Par. 1. Table salt, dairy salt, is fine-grained crystalline salt containing on a water-free basis not more than one and four-tenths (1.4) per cent. of calcium sulphate ($CaSO_4$), nor more than five-tenths (0.5) per cent. of calcium and magnesium chlorids ($CaCl_2$ and $MgCl_2$), nor more than one-tenth (0.1) per cent. of matters insoluble in water.

RULE 2.—DEFINING ADULTERATION.

In addition to the statements defining adulteration as given in Chapter 104, Section 2, Acts 1907, a food shall be deemed to be adulterated:

First: If its strength or purity falls below the professed standard under which it is sold.

Second: If it differs from the standard of strength or purity established in the rule entitled "Rule 1, Regulating Minimum Standards for Food."

Third: If it is manufactured or sold under conditions contrary to rules 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14.

RULE 3.—LABELING.

(a) The term "label" applies to any printed, pictorial or other matter upon or attached to any package of a food or drug product or any container thereof.

(b) The principal label shall consist, first, of all words which the food and drug act, June 30, 1906, specifically requires, to wit, the name of the substance or product; the name of the place of manufacture in the case of food compounds or mixtures; words which show that the articles

are compounds, mixtures or blends; the words "compound," "mixture" or "blend," or words designating the substances or their derivatives and proportions required to be named in the case of drugs and foods. All these required words shall appear upon the principal label with no intervening descriptive or explanatory reading matter. Second, if the name of the manufacturer and place of manufacture are given, they shall appear upon the principal label. Third, elsewhere upon the principal label other matter may appear in the discretion of the manufacturer.

(c) The principal label on foods or drugs for domestic commerce shall be printed in English (except as provided in regulation 19), with or without the foreign label in the language of the country where the food or drug product is produced or manufactured. The size of type shall not be smaller than 8-point (brevier) caps: Provided, That in case the size of the package will not permit the use of 8-point cap type the size of the type may be reduced proportionately.

(d) The form, character and appearance of the labels, except as provided above, are left to the judgment of the manufacturer.

(e) Descriptive matter upon the label shall be free from any statement, design or device regarding the article or the ingredients or substances contained therein, or quality thereof, or place of origin, which is false or misleading in any particular.

(f) An article containing more than one food product or active medicinal agent is misbranded if named after a single constituent.

In the case of drugs the nomenclature employed by the United States Pharmacopoeia and the National Formulary shall obtain.

(g) The term "design" or "device" applies to pictorial matter of every description, and to abbreviations, characters, or signs for weights, measures, or names of substances.

(h) The use of any false or misleading statement, design, or device shall not be justified by any statement given as the opinion of an expert or other person, appearing on any part of the label, nor by any descriptive matter explaining the use of false or misleading statement, design, or device.

RULE 4.—REGULATING THE SANITATION OF DAIRIES AND THE SALE OF MILK AND CREAM.

Par. 1. No building shall be used for stabling cows for dairy purposes which is not properly constructed, well lighted, well ventilated and provided with a suitable solid floor of plank, cement or other impervious material that can be readily cleaned, and laid with proper grades and channels to carry off all drainage.

Par. 2. No water closet, privy, cesspool, urinal, inhabited room or work shop shall be located within any building or room for stabling cows, or for the storage of milk or milk products; nor shall any fowl, hog, horse, sheep, goat or other animal be kept in any room used for milking or for storing milk or milk products.

Par. 3. All rooms and stables in which cows are milked shall be thoroughly clean and in good repair, and shall be painted or whitewashed once each year.

Par. 4. All manure shall be removed daily from the room or stable in which cows are milked, and shall not be stored where odors from the same will be noticeable at the stable or milk room.

Par. 5. All persons keeping cows for the production of milk for sale shall cause each cow to be kept clean and groomed.

Par. 6. Every person using any premises for keeping cows shall cause the yard or pasture in connection therewith to be provided with a proper receptacle for drinking for such cows, and none but fresh, clean, pure water shall be stored in such receptacle.

Par. 7. Any inclosure in which cows are kept shall be graded and drained so as to keep the surface reasonably dry and to prevent the accumulation of water therein, and no garbage, urine, fecal matter or similar substances shall be placed or allowed to remain in such inclosure, and no open drain shall be allowed to run through it.

Par. 8. All milk shall be removed, as soon as drawn, from the stable to the milk room. The milk room shall be separate from the stable in which the cows are kept and shall not be used as a living or sleeping room, but shall serve for the handling and keeping of milk and cream exclusively. It shall be sanitary in construction, properly screened, supplied with proper ventilation, light and pure water, and suitable facilities for straining, cooling and storing milk or milk products, and for washing and sterilizing all utensils and apparatus in which milk is removed, stored and delivered.

Par. 9. All utensils used for the reception, storage or delivering of milk or cream shall be made of glass, stoneware, glazed metal or tinplate free from rust and of sanitary construction.

Par. 10. All cans, pails, strainers, coolers, dippers, separators, bottles, churns, butter workers, and other dairy utensils shall be cleansed from all remnants of milk and scalded with boiling water or live steam after each use.

Par. 11. All milk shall be strained through clean 80-mesh wire strainers, or properly sterilized cloth, and shall be cooled to 60° F. or below within one hour after it is drawn from the cow. It shall be kept at 60° F., or below until it leaves the farm, and if retailed to the consumer, until delivered. Warm milk shall not be mixed with cold, but shall be kept in separate vessels until properly cooled.

Par. 12. All milk or cream cans delivered to creameries or dealers in cities shall be covered with tight fitting lids, and when conveyed in open wagons shall be covered with clean canvas while being so conveyed.

Par. 13. No person, firm, association or corporation buying, storing or receiving milk for the purpose of selling the same for consumption as such, or for manufacturing it into butter, cheese, ice cream, condensed milk or other human food, shall keep the same in utensils, cans, vessels or rooms that are unclean, or have unsanitary surroundings or drainage, or under conditions favorable to unhealthfulness or disease, and milk to be sold for consumption as such, within one hour after receiving the same shall be cooled to a temperature not higher than 60° F., and shall be kept at such temperature until delivered.

Par. 14. Every person engaged in the production, storage, transportation, sale, delivering or distribution of milk, immediately on the occur-

rence of any case or cases of infectious disease, either in himself or his family or amongst his employes or their immediate associates, or within the building or premises where milk is stored, sold or distributed, shall notify the secretary of the City Board of Health.

Par. 15. No person having an infectious disease or having recently been in contact with a person having an infectious disease, shall milk or handle cows, measures or other vessels used for milk or milk products intended for sale until all danger of communicating such disease to other persons shall have passed, as determined by the secretary of the City Board of Health.

Par. 16. No vessels which have been handled by persons suffering from infectious diseases shall be used to hold or convey milk until they have been thoroughly sterilized.

Par. 17. No bottle, can or receptacle used for the reception or storage of milk shall be removed from a private house, apartment or tenement wherein a person has an infectious disease until such bottle, can or receptacle shall have been properly sterilized under the direction of the secretary of the City Board of Health.

RULE 5.—THE FEEDING OF SLAUGHTER-HOUSE OFFAL.

Whereas, It is known that hogs fed upon raw slaughter-house offal and upon dead animals, frequently acquire tuberculosis, trichinosis and other parasitic diseases, thus making their flesh dangerous as food, therefore;

Hogs shall not be fed any uncooked slaughter-house offal or the uncooked flesh of dead animals.

RULE 6.—KEEPING LEMONADE OR OTHER ACID DRINKS IN GALVANIZED IRON RECEPTACLES.

Whereas, It is known that citric, tartaric and other fruit and vegetable acids will dissolve zinc, forming citrates, tartrates and other salts of zinc which are injurious to health, therefore;

Zinc lined or galvanized metal containers shall not be used in the manufacture and for the storage of acid drinks and other acid food products.

RULE 7.—BLEACHED FLOUR.

The sale of flour bleached with the oxides of nitrogen or otherwise artificially bleached is in violation of the law and such bleached flour shall not be sold unless the barrel, bag, sack, or other receptacle has on its head or side as a part of the principal label the words, "Bleached flour" in plain black Gothic letters, at least one inch in height.

RULE 8.—ALUM IN PICKLES.

The manufacture for sale within this state or the sale of cucumber, onion or other pickles prepared with alum is in violation of the Pure Food Law of March 4, 1907, and foods so prepared shall not be sold.

RULE 9.—SIDEWALK DISPLAY OF FOOD STUFFS.

Fruits, vegetables, and other food products shall not be displayed or stored on the sidewalk or outside the place of business unless they are securely covered by cases of glass, wood, or metal or enclosed in tight boxes, bags or barrels, and all such cases or containers shall be raised at least two feet above the sidewalk. The practice heretofore followed of covering small fruits with screens or nettings is not sufficient compliance with this rule. This rule shall not, however, apply to fruits and vegetables which have to be skinned or peeled before use and which are stored in tight barrels, boxes or crates.

RULE 10.—UNPROTECTED FOOD STUFFS.

Prepared food stuffs, such as bakers' goods, confectionery, shelled nuts, etc.; dried fruits such as dates, figs, peaches, prunes, apricots, etc.; cereal products, such as tapioca, breakfast foods, noodles, etc.; pickled products, such as pickles, chili sauce, chow-chow, etc.; fruit products, such as apple butter, jellies, jams, etc.; meat products, such as dried, salted or smoked fish, veal loaf, pickled pigs' feet, mince-meat, chipped beef, boiled ham, or other foods prepared for eating or subject to attack of worms or flies, shall not be displayed for sale unless protected from flies, dust, dirt, and all other foreign or injurious contamination by suitable coverings of glass, wood or metal.

RULE 11.—SAUSAGE AND MEAT PRODUCTS.

Sausage and other meat products (except meat loaf) which contains "blinder," "filler," or any form of cereal product or added water shall not be sold unless the package is plainly marked in black Gothic letters at least one-fourth of an inch in height "Sausage with Cereal Added," "Potted Meat with Cereal Added," "Sausage with Water Added," etc.

RULE 12.—WATERED OYSTERS.

Bulk or shucked oysters to which water or ice has been added shall not be sold.

RULE 13.—LARD COMPOUNDS.

Compounds of lard with beef stearine, cottonseed oil, lard stearine in excess of 5 per cent, or other stearine, fats and oils may be sold when labeled in black Gothic letters at least one-half inch in height. "Lard Compound," provided, however, that the amount of lard present must be in excess of 50 per cent. If less than 50 per cent. of lard is present in the mixture, the label should not bear the word "lard," and the goods should be labeled "compound," and provided also, that all such mixtures and compounds, shall, in addition to the words "lard compound," and "compound," declare in plain type not smaller than 8-point (brevier) caps, the percentage of each ingredient present.

RULE 14.—ARTIFICIAL SWEETNESS.

Saccharin, dulcin, glucin, sucrol, guarantose, Heyden-sugar crystals, or any other coal tar or synthetic sweeteners or sugar substitutes shall not be used in ginger ale, bottled soda, pop, cider, fruit juices, or any other preparations intended to be used as food or drink by man.

RULE 15.—METHODS OF ANALYSIS.

Unless otherwise directed by the State Food and Drug Commissioner, the methods of analysis employed shall be those prescribed by the Association of Official Agricultural Chemists and the U. S. Pharmacopoeia.

PATHOLOGICAL AND BACTERIOLOGICAL LABORATORY.

RULES OF THE INDIANA STATE BOARD OF HEALTH GOVERNING CHEMICAL ANALYSES AND PATHOLOGICAL AND BACTERIO- LOGICAL EXAMINATIONS.

Passed July 9, 1909, by the Indiana State Board of Health according to Chapter 144, Acts 1909.

Attest: J. N. HURTY, Secretary.

Acts 1905, chapter 38, sec. 2, says:

"The State Laboratory of Hygiene shall be at Indianapolis, and shall be used for making analyses of foods and drugs for the purpose of enforcing the pure food and drug laws, for making sanitary analyses, pathological examinations and studies in hygiene and preventive medicine to aid in the enforcement of the health laws, and for no other purpose.

"All work done in the State Laboratory of Hygiene shall be exclusively and entirely for the public benefit, and no fees shall be charged.

FOOD, DRUG AND WATER ANALYSES.

RULE I. When possible, all samples of foods and drugs shall be original packages, and when impossible, as in the case of cheese, milk, etc., samples may be sent after making into secure, plainly-labeled packages. The quantity of bulk goods shall not be less than eight ounces, and liquid not less than one pint.

RULE II. All samples must be attended by a statement of their origin and reasons for making analysis, and clearly setting forth any pertinent facts concerning the same.

RULE III. Upon request of any health officer or licensed physician, sanitary water analyses will be made as follows, to wit:

(1) A request clearly stating reasons shall first be submitted, and if satisfactory to the executive officer of the board, a shipping case will be forwarded to the applicant. Said shipping case shall contain blank forms for records and full directions for collecting, sealing and shipping, and the express both ways shall be paid by the applicant.

(2) Unless samples are collected in official containers, strictly according to directions, and unless all blanks are fully made out, analysis and report will not be made.

(3) Express shall always be prepaid, otherwise the package will not be received and receipted for, and analysis shall not be made.

BACTERIOLOGICAL AND PATHOLOGICOL EXAMINATIONS.

RULE IV. Diphtheria cultures, sputum examinations and blood examinations for the diagnosis of malaria and typhoid fever shall not be made unless specimens are collected in the *special outfits* furnished by the State Board of Health, and not then, unless the directions for collecting are strictly followed and the information blanks are completely filled out. *Approved outfits, according to U. S. regulation,* may be secured direct from the state Board, also from local health officers or established stations, free of cost.*

RULE V. Bacteriological examinations of samples of water shall not be made unless the said samples are collected in the outfits furnished by the state board according to the directions accompanying said outfit, and not then if the accompanying information blanks are not completely filled out and properly signed.

RULE VI. Pathological specimens, such as curettings, samples from tumors, cancers, pathological fluids, etc., shall not be examined unless collected, preserved and sent according to the conditions and directions obtainable by correspondence with the board. Preserve specimens of pathological tissues in twice their volume of 10 per cent. formalin (1 part commercial formalin to 9 parts of water).

RULE VII. The charges for transportation of all packages sent to the State Laboratory of Hygiene shall be prepaid, otherwise they shall not be accepted. Reports of analyses and reports of examinations shall always be sent by mail, but, if requested, results will be telephoned or telegraphed at the expense of those making the request.

RULE VIII. No analyses or laboratory examinations shall be made which are not related to or of importance to the public health.

*Note. —The U. S. law is severe and says—"Pathological specimens of any kind whatever shall not be sent in the mails except they be prepared according to the regulations of Postmaster-General."

RULES GOVERNING EXAMINATIONS OF COUNTY, CITY AND TOWN HEALTH OFFICERS.

RULES OF THE INDIANA STATE BOARD OF HEALTH GOVERNING THE EXAMINATION OF APPLICANTS FOR CERTIFICATES OF ELIGIBILITY TO APPOINTMENT TO THE OFFICE OF COUNTY HEALTH COMMISSIONER, CITY HEALTH OFFICER AND TOWN HEALTH OFFICER.

Passed July 9, 1909, by the Indiana State Board of Health according to Chapter 144 of the Acts of 1909.

Attest: J. N. HURTY, Secretary.

RULE 1. On and after January 4th, 1910, only those persons who have passed a regular examination by the State Board of Health in hygiene and sanitary science and hold a certificate of eligibility, or who have had recent experience in the duties and work of the office, shall be eligible to appointment as county health commissioners, city health officers, or town health officers.

RULE 2. Applicants for examination shall be licensed physicians, able bodied, temperate, not addicted to the use of drugs, and of good moral character: Provided, if in towns no licensed physician can be found to accept the position, then the appointment shall be made from an eligible list supplied by the State Board of Health of persons not physicians who hold certificate of eligibility from said board.

RULE 3. Applications for admission to examinations shall be made in writing upon blanks furnished by the State Board of Health, at least one week previous to the announced date of the examination at which the applicant desires to appear.

RULE 4. Examinations will be both oral and written and will be held at times and places announced from time to time by the state board; and said examinations shall well cover the field of hygiene and sanitary science, with special reference to the state health statutes and health rules of the State Board of Health.

RULE 5. Serious defects in vision or hearing, serious lameness or continued ill health, shall disqualify an applicant. Applicants who fail to pass an examination may apply, after a lapse of six months, to be examined again.

RULE 6. All applicants who possess the required qualifications and who pass the prescribed examinations, will be given an official certificate of eligibility which will be evidence of their legal eligibility to appointment as county health commissioner in any county of the State or as city or town health officer in any city or town in the State.

SPECIAL MEETING JULY 16, 1909.

Called to order by President McCoy, 2 p. m.

Present: Drs. McCoy, Tucker, Hurty.

The President stated the meeting was called to give a hearing to the authorities of Gibson County, of the City of Princeton and of the school city of Princeton, upon the matter of the pollution of the two small branches which flow through Princeton, according to the notice and reports of the meeting held June 25, 1909.

The following gentlemen were present: Mr. John W. Brady, attorney city of Princeton; Dr. Robert S. Anderson, member school board; Mr. Henry A. Yeager, attorney, county commissioner and member school board.

The following four motions were offered:

First Motion: Comes now the defendant, the City of Princeton, by its attorney, and enters in this cause its special appearance for the purpose of moving and it does now move by its written motion filed herein, the dismissal of the cause upon each one separately and severally of the reasons in said written motion set out.

Said written motion was received and filed.

Comes now the defendant, the County Commissioners of Gibson County, by their attorney, and enters in this cause its special appearance for the purpose of moving and they do now move by their written motion filed herein, the dismissal of this cause upon each one separately and severally of the reasons in said written motion set out.

Said written motion was received and filed.

Comes now the defendant, the School City of Princeton, by its attorney, and enters in this cause its special appearance for the purpose of moving and it does now move by its written motion filed herein the dismissal of this cause upon each one separately and severally of the reasons in said written motion set out.

Said written motion was received and filed.

Second Motion: Comes now the defendant, the City of Princeton, by its attorney, and files herein its duly verified written plea to the jurisdiction of the State Board of Health in the cause.

Said written plea was received and filed.

Comes now the defendant, the County Commissioners of Gibson County, by their attorney, and files herein their duly verified writ-

ten plea to the jurisdiction of the State Board of Health in the cause.

Said written plea was received and filed.

Comes now the defendant, the School City of Princeton, by its attorney, and files herein its duly verified written plea to the jurisdiction of the State Board of Health.

Said written plea was received and filed.

Third Motion: Comes now the defendant, the City of Princeton, by its attorney, and files herein its separate demurrer to the complaint in the above entitled causes.

Said separate demurrer was received and filed.

Comes now the defendant, the County Commissioners of Gibson County, by its attorney, and file herein their separate demurrer to the complaint in the above entitled causes.

Said separate demurrer was received and filed.

Comes now the defendant, the School City of Princeton, by its attorney, and files herein its separate demurrer to the complaint in the above entitled causes.

Said separate demurrer was received and filed.

Fourth Motion: In the event the demurrer is overruled, the following motion is introduced:

Comes now the defendant, the City of Princeton, by its attorney, and files herein its answer in two paragraphs to the complaint in the above entitled cause.

Said answer was received and filed.

Comes now the defendant, the County Commissioners, of Gibson County, by their attorney, and files herein, their answer in two paragraphs to the complaint in the above entitled cause.

Said answer was received and filed.

Comes now the defendant, the School City of Princeton, by its attorney, and files herein its answer in two paragraphs to the complaint in the above entitled cause.

Said answer was received and filed.

After filing the above four motions, the Board went to executive session in consultation with Assistant Attorney-General Cavens, who carefully examined all the documents and advised dismissal of the case. The following order was then adopted.

Ordered. That the case of pollution of a public stream against the defendants, namely, City of Princeton, Board of Commissioners of Gibson County, and School City of Princeton be dismissed.

SPECIAL MEETING, SEPTEMBER 7, 1909.

Called to order 12 m. by President McCoy.

Present: Drs. McCoy, Davis, Tucker.

The Secretary being absent by order of the Board, Dr. Tucker was appointed Secretary pro tem.

President McCoy announced the object of the special meeting was to attend the Conference of the State Board with the dairymen of the state, which was ordered called by the Board at its last meeting, and to attend to any business which needed attention.

Dr. McCoy further announced he had called the Conference to order promptly at 10 a. m. with about 80 persons in attendance. He had made a short opening address to explain and make clear the attitude of the Board toward the dairy industry. In brief it was to encourage and bring about as soon as possible, the greatest practicable cleanliness of dairies, the healthiness of animals and early delivery of milk to consumers. The program was as follows: -

SECOND ANNUAL CONVENTION OF STATE AND CITY HEALTH DEPARTMENTS WITH THE DAIRYMEN OF INDIANA.

At Indianapolis, September 7 and 8, 1909. Under the Auspices of the Indiana State Board of Health.

To study Sanitary Milk Production and Distribution; the Application of the Tuberculin Test to Dairy Cattle, and other Problems of Vital Interest to the Milk Producer and Consumer.

All Sessions will be Held in the Hall of the Supreme Court Room, State House.

PROGRAM.

Tuesday, September Seventh.

First Session—Ten A. M.

Address.....Dr. Geo. T. McCoy, President State Board of Health
Announcements.

Appointment of Committees.

"The Dairy Outlook".....

Hon. D. F. Maish, Proprietor Clover Leaf Farm, Frankfort, Ind.

"Modern Dairying".....

Ivan C. Weld, Dairy Division, Bureau of Animal Industry, U. S. Department of Agriculture.

"Some Features of Eastern Dairying which are Applicable to Indiana Conditions".....

John Prescott, with the Walker-Gordon Laboratory, Indianapolis, Ind.

Second Session—Two P. M.

"Dairy Inspection From My Point of View".....

D. D. Mills, City Milk Inspector, Indianapolis.

"The Market Milk Industry".....

B. H. Rawl, Chief Dairy Division, Bureau of Animal Industry, U.
S. Department of Agriculture.

Five-Minute Talks by Practical Men:

1. John C. Chamberlain, Proprietor LaFayette Creamery Co.
2. V. D. Macy, Dairyman, Mooresville, Ind.
3. Frank W. Tucker, State Food Inspector.
4. Mgr. Rigney, New Sanitary Milk Plant, Terre Haute, Ind.
5. J. P. Simonds, Director State Bacteriological Laboratory.
6. D. B. Johnson, President State Dairymen's Association.
7. J. Cooperider, M. D., Secretary Board of Health, Madison, Ind.
8. S. P. Scherer, M. D., Proprietor Springdale Farm Dairy, Indianapolis.

"What the Law Expects of the Dairyman".....

James Mulligan, Attorney and Dairyman, Terre Haute, Ind.

Third Session—Eight P. M.

"The Improvement of Chicago's Milk Supply".....

Dr. W. A. Evans, Health Commissioner of Chicago.

"The State Veterinarian and His Relation to the Stock Interests of the
State".....W. E. Coover, V. S., State Veterinarian.

"Dairy Conditions in Indiana"—Illustrated.....

John Owens, State Food Inspector.

Wednesday, September Eighth.

Fourth Session—Ten A. M.

"Farm Butter Making in Compliance with the State and Internal Revenue
Laws"

O. F. Hunziker, Professor of Dairying, Purdue University.

Clinic—Bureau of Animal Industry—U. S. Department Agriculture.
This clinic will show the pathological condition of an apparently healthy
milk cow which at the time of slaughter was found to have tuberculosis.

"Bovine Tuberculosis".....

R. A. Craig, D. V. S., Prof. Veterinary Science, Purdue University.

Fifth Session.

"The Dairy Industry of Southern Indiana".....

A. W. Bruner, State Food Inspector.

"The Health Officer and the Dairyman".....

Dr. Chester A. Funk, Secretary Board of Health, New Albany.

Dr. R. H. Gerard, Health Officer, Crawfordsville, Ind.

Dr. Eugene Buehler, Health Officer, Indianapolis.

Dr. C. S. Bond, Health Officer, Richmond, Ind.

"The Model Dairy Ordinance".....

H. E. Barnard, State Food and Drug Commissioner.

Reports of Committees.

By the courtesy of the company automobiles will be provided and an inspection trip will be made to the Polk Sanitary Milk Plant, at the close of the convention.

Your attention is called to the display of dairy apparatus in the corridors.

Various phases of the dairy and milk question were discussed and the Board adjourned to 12 m. the next day.

ADJOURNED MEETING, SEPTEMBER 8TH.

Called to order 12 m. by Dr. Tucker, who was called to the chair.

Present: Drs. Tucker, Davis, Hurty. .

Dr. Tucker, having attended the conference with dairymen the first day, reported the program as laid down for that day was duly followed and fulfilled. The attendance had been over 100, the papers and addresses were attentively listened to, and the discussions were excellent. Dr. Tucker suggested and Dr. Davis strongly supported the suggestion, that State Fair week was an inopportune time for holding a conference of the health authorities, with the dairymen, and therefore a more satisfactory time should be selected if the Board concluded to hold such a conference another year.

SPECIAL MEETING, SEPTEMBER 24, 1909.

Present: McCoy, Davis, Tucker, Hurty.

The President announced the object of the meeting to be to formulate questions for the examination of health officers, the examination to be held September 30, 1909.

After consideration the following instructions and questions were adopted, and it was

Odered. That in marking the fifty questions, a score of 20 would be perfect for each question and that a score of at least 750 must be reached to pass an applicant.

INSTRUCTIONS.

(1) Examination begins at 9 a. m. All applicants must be in their seats at sharp 9.

(2) Tables are numbered. Select the table the number of which corresponds with your card number.

(3) Fill out Preliminary Statement the first thing, fold and place with your admission ticket in the special envelope. Envelopes will be collected soon after the examination begins.

(4) First session 9 to 12. Second session 1 to 4.

(5) First half of examination must be finished by 12 m. and first set of questions returned to Moderator. Second set of questions must be finished by 4 p. m.

(6) Any applicant who finishes first set of questions before 12 m. may apply for the second set to the Moderator, who will at his discretion issue the same. If issued, applicant will not be permitted to leave the room until examination is finished.

(7) Any one wishing to leave the room during the examination shall apply to the Moderator for permission.

(8) Applicants shall not remove any papers whatsoever from the room at any time, and shall leave them upon their tables.

PRELIMINARY STATEMENT OF APPLICANT.

1. I was born at.....
on the..... day of..... 18.....
2. My preliminary education was obtained at.....
.....
(State, if common school or collegiate, date of degree.)
3. I graduated in medicine from.....
(Give name of college in full.)
On the..... day of.....
4. My State certificate was issued.....
(Date of State license)
5. I am a member of the following medical societies:.....
.....
6. I have practiced medicine continuously at my present location for
..... years, and at the following places for the years named:
.....
7. I now hold or have held the following positions:.....
.....
8. I have served as Health Officer of.....
from..... to.....
(Give dates.)
9. I now reside at....., a city of.....
inhabitants.
10. Signed.

HEALTH LAW.

(1) What are the powers and duties of the State Board of Health?

(2) What are the qualifications, duties and powers for all health officers?

(3) What is the penalty for violation of the Health Law and also for violation of the rules of the State Board of Health?

(4) What is a nuisance as defined by the law and how shall a health officer proceed to abate it?

(5) How are expenses incident to disease prevention work paid?

(6) How shall health officers proceed upon learning in any way of the existence of conditions which may generate, promote or transmit disease?

HYGIENE AND SANITARY SCIENCE.

(1) What does the Science of Hygiene cover? In a word, what is Hygiene?

(2) What do you understand by the term Sanitary Science?

(3) What do you understand by the term State and Preventive Medicine?

(4) Name the water-borne diseases.

(5) Name at least five impurities found in the air of cities.

(6) What effect does an excess of carbon dioxid in the air of a schoolroom have upon the pupils?

(7) What have you to say about the carriage of infection by insects?

(8) Describe the disposal of sewage by the septic tank method.

(9) Detail some relations of milk disease.

VITAL STATISTICS.

(1) What do you understand by the term Vital Statistics, their value and why collect them?

(3) How are death, birth, contagious disease and marriage statistics collected? Answer separately for each.

(3) Detail the conditions under which burial permits shall be issued.

(4) If there is reason to think that foul play attends a death, what shall be the procedure?

(5) What are the penalties for burying a dead body without a permit?

(6) What is the procedure by which health officers shall compel the reporting of deaths and births?

(7) What penalties lie against physicians for failure to report births and deaths?

(8) What record books are required for keeping vital statistics?

FOOD AND DRUG LAW.

(1) What would you consider unsanitary conditions at:

a. Bakery. b. A Grocery store. c. A Canning Factory.

(2) Upon the discovery of unsanitary conditions in a grocery, what would be your duty and how would you proceed?

(3) An analysis of milk in your town shows the product to be adulterated. How would you proceed against the offender and on whom would you call as witnesses?

(4) How would you proceed to determine the character of the public water supply of your community? If found unsanitary, what would be your next step?

(5) What constitutes a sanitary dairy? If you have reason to suspect that milk from diseased animals is being sold, state what you would do and how you would go about it.

QUARANTINE LAW.

(1) What diseases shall be quarantined, and how shall quarantine be established?

(2) Who shall notify health officers of the existence of contagious diseases? And what is the penalty for failure to notify?

(3) What are the duties of health officers after the recovery or death of any infected person?

(4) What does the law command in regard to infected children in the schools?

(5) Under what conditions may persons sick with a contagious, infectious or pestilential disease, be removed from his home, hotel or boarding house to a hospital?

(6) When and under what conditions may health officers destroy infected clothing and bedding and how are such destroyed articles paid for?

(7) What penalties lie against any one for violating the quarantine law and the rules of the State Board for its detail enforcement?

MISCELLANEOUS.

(1) How shall animals dead of cholera, glanders and anthrax be disposed of?

(2) Under what conditions and how may free antitoxin be secured by physicians?

(3) How many cubic feet of space shall be supplied to each pupil in the public schools and what are the duties of health officers upon discovering that the required cubic space is not supplied?

(4) Tell how to disinfect a room according to the rules.

(5) What blanks are supplied by the State Board and what blanks shall be supplied by local authorities?

BACTERIOLOGY AND PATHOLOGY.

(1) What is the most important sequel of diphtheria?

(2) How may services of the State Laboratory of Hygiene be secured?

(3) (a) What are the usual clinical symptoms of rabies in a dog?

(b) What is the modern method of diagnosing rabies in animals?

(c) What part of the dog should be sent to the Laboratory for diagnosis, and how should it be prepared for transmission?

(4) Give the differential diagnosis of smallpox.

(a) What is the period of incubation?

(b) At what stage of the disease is it the most contagious?

(c) When should a smallpox patient be released from quarantine?

(5) Give the differential diagnosis of measles. Should measles be quarantined? And if so, why and how long?

(6) Discuss the importance of bacteriological diagnosis of all sore throats.

(7) Sources of infection in--

(a) Typhoid fever.

(b) Diphtheria.

(c) Tuberculosis.

(8) Give the diagnosis of malarial fever. What is the role of the mosquito in its production or propagation? How does the drainage of swamps stop the spread of malarial fever?

RECENT EXPERIENCE.

Ordered, That the term "recent experience" as occurring in the statute, be held to apply to those holding office at the time of examination.

Ordered, In case in any town a physician holding a certificate of eligibility cannot be found who will serve as town health officer, the County Health Commissioner shall investigate and find, if possible, in said town a licensed embalmer or licensed pharmacist who will consent to serve and recommend him to the State Board of Health. If said recommendation is accepted, a certificate of eligibility shall be issued.

SPECIAL MEETING—SEPTEMBER 30, 1909.

Called to order by President McCoy at 12 m. Present: McCoy, Davis, Tucker, Hurty.

The President announced the object of the meeting to be to hold the first regular examination of applicants for certificate of eligibility to appointment to the position of health officer, and to attend to any other business which might come up.

The Secretary announced there were 103 applications with entrance tickets duly issued and that 83 applicants were actually present.

After discussion of various matters and facts incident to the examination, the Board adjourned to continue the said examination.

Adjourned to meet in Terre Haute at Terre Haute House, 12 m. Friday, October 8.

REPORT
OF THE
DIVISION OF BACTERIOLOGY
LABORATORY OF HYGIENE
FOR THE
Year Ending October 31, 1909.

J. P. SIMONDS, A. B., M. D.,
Superintendent.

WM. SHIMER, A. B., M. D.,
Assitant Pathologist.

ADA SCHWEITZER, M. D.,
Assistant Bacteriologist.

ROBERT JOHNSON,
Te-chnical Assistant.

SUPERINTENDENT'S REPORT.

To the Indiana State Board of Health:

Gentlemen—I herewith submit the following report of the work of the Bacteriological Laboratory for the year ending October 31, 1909.

INTRODUCTORY.

On assuming charge of the laboratory on December 1, 1908, I was greatly pleased to find so many of the physicians of Indiana giving it such hearty support, thus furnishing excellent evidence of their confidence in the work of the institution. It has been my constant aim to keep the service on the same high plane of efficiency it previously occupied and to make all improvements that seem possible. I have striven to bring the laboratory into closer touch with the doctors of the state. By visiting county and district meetings, I have been able to talk to physicians personally and publicly concerning the laboratory, explaining the nature of our work, correcting misunderstandings and in every way impressing upon them the value of such an institution to them and their patients. During the year I have attended meetings of the State Medical Association, of two district societies and of ten county societies. Most of these visits have been made since September 15. The records of the laboratory, for the past two months especially, seem to indicate good results from this personal work.

The number of physicians who make use of the laboratory is large. But there are still a great many practitioners who never send us a specimen. This may be due to lack of knowledge of the work done here, to want of appreciation of the value of such examinations, or to indifference. By continuing the policy of visiting medical meetings over the state, I hope to bring the laboratory more and more before Indiana doctors with the belief that increased information concerning our work will correct misunderstandings as to its value and will arouse interest in the indifferent.

While the work of the laboratory is primarily for physicians and citizens of Indiana, we hope to be able, in time, to win wider recognition by the publication of results of research by members of the laboratory staff. Conditions are not now the most favor-

able for original investigation, on account of lack of room and of the great amount of routine each member of the staff must do. There are, however, many opportunities for the investigation of questions, the solution of which will be of value to the public health work of the state. Several interesting pieces of research have been done during this year, however, in spite of difficulties, and records of them will be found in another part of this report.

TOTAL NUMBER OF SPECIMENS EXAMINED.

The total number of specimens examined during the year is 7,951, distributed as follows:

Sputum	3,458
Throat Cultures	1,445
Widal Reactions	1,508
Suspected Malaria	194
Suspected Rabies	144
Suspected Gonorrhea	349
Miscellaneous	853
Total	7,951

The following table shows the number of specimens examined since the establishment of the laboratory:

TABLE 1.

Year.	Number of Specimens.
1906	2,258
1907	3,989
1908	8,087
1909	7,951

The growth up to the end of 1908 is easily evident. The fact that there has been equally steady growth during 1909 is not so readily seen and needs some explanation. During 1908 there occurred four threatened epidemics of diphtheria in which some one sent from the laboratory took cultures from the throats of all, or the vast majority of, the children in the public school in the territory involved. These epidemics and the number of cultures taken were as follows:

Plainfield	98
Bridgeport	37
Ligonier	529
Mulberry	289
Total	953

During 1909 diphtheria has not been so prevalent, and no school inspection and no such wholesale taking of cultures has been done. Hence, in judging the work of the laboratory for these two years, only those specimens that were received in the ordinary daily routine should be used in the comparison. If we deduct from the total number of examinations in 1908 the above 953 throat cultures taken by a member of the laboratory staff, we find that there were 7,134 specimens received directly from the physicians themselves. This gives an increase of 817 specimens over 1908. Table 2 shows the number of specimens of each kind examined in 1908 and 1909:

TABLE 2.

	1908.	1909.
Sputum	3,136	3,458
Throat Cultures	2,779	1,445
Widal Reactions	1,270	1,508
Suspected Malaria	167	194
Pathological Tissues	165	187
Brains of animals for Rabies	82	144
Suspected Gonorrhea	178	349
Miscellaneous	310	666
Total	8,087	7,951

It is seen from the above table that there has been a very material gain in 1909 in the number of each class of specimens examined, except in throat cultures for diphtheria. The difference in this instance is accounted for by the school inspection already mentioned and by the fact that diphtheria is known to have been more prevalent in 1908 than in 1909. Thus it is certain that the work of the laboratory has shown a healthy, steady growth during the past year.

TUBERCULOSIS.

During the year 3,458 specimens of sputum were examined for tubercle bacilli. Of these 814, or 26.5 per cent., were positive, and 2,544, or 73.5 per cent., were negative. Table 3 shows the distribution of these examinations by months:

TABLE 3.

SPUTUM EXAMINATIONS BY MONTHS.

	Positive.	Negative.	Total.
November	66	156	222
December	72	203	275
January	92	184	276
February	56	212	268
March	74	300	374
April	74	241	315
May	72	219	291
June	73	224	297
July	100	202	302
August	71	199	270
September	77	196	273
October	87	208	295
Totals	914	2,544	3,458

There is no very marked variation in the number of specimens received from month to month. This is another illustration of the truth so forcibly brought out in the vital statistics tables, namely, that tuberculosis is a disease which is influenced very little, if at all, by seasons. There were, indeed, a few more positive specimens received in July than in January. The largest number of specimens received in any single month came in March and April. While the difference is not great, it may be taken as a manifestation of the effects of the closed sleeping rooms and generally ill ventilated houses during the winter months.

In addition to sputum, tubercle bacilli were found in several specimens of urine and in one of discharge from the ear. These will be referred to again in the proper place.

Dr. Shimer has applied the Calmette ophthalmo-reaction for the diagnosis of tuberculosis on 125 patients. A summary of the results will be found in another place.

DIPHTHERIA.

The total number of throat cultures examined for diphtheria bacilli was 1,445. Of these, 426, or 29.4 per cent., were positive, and 1,019, or 70.6 per cent. negative. Since the 1,019 includes the results of second cultures for release from quarantine, it is evident

that a much higher per cent. of first cultures made for diagnosis was positive.

Table 4 shows the number of specimens arranged by months:

TABLE 4.

DIPHtherias BY MONTHS.

	Positive.	Negative.	Total.
November	125	226	351
December	38	118	156
January	31	123	154
February	27	86	113
March	15	42	57
April	14	8	22
May	8	32	40
June	5	14	19
July	2	14	16
August	29	29	58
September	49	89	138
October	83	238	321
Totals	426	1,019	1,445

From the above table the number of cultures showing diphtheria bacilli received during the vacation period is seen to be remarkably small. Thus the average number of positives per month from May to August inclusive is 11, while the average for the remainder of the year is 48.

Table 5 shows the distribution of 374 cases which showed diphtheria, according to the age and sex of the patients:

TABLE 5.

THROAT CULTURES SHOWING DIPHTHERIA BY AGES.

Age.	Males.	Females.	Total.
Up to 3 years	19	15	34
4 to 6 years.....	35	37	72
7 to 10 years.....	59	44	103
11 to 15 years.....	29	46	75
16 to 20 years.....	15	24	39
21 to 30 years.....	15	17	32
31 to 40 years.....	4	9	13
41 to 80 years.....	1	5	6
Totals	177	197	374

In making this table only those cases were selected in which the information given included the age and sex of the patient and

in which the culture was made for diagnosis and not for release from quarantine. Only 374 cases fulfilled both these requirements, chiefly because the physicians so frequently are not careful in filling out the information cards completely.

The difference in the number of cases in the two sexes (177 males, 197 females) is too small to warrant consideration. But it is a noticeable fact that between the ages of 4 and 15 there were 250 cases, or 66.8 per cent. This period corresponds to the kindergarten and grammar school ages. When it is remembered that a very large proportion of children from 4 to 15 years old suffer from chronically enlarged tonsils and other forms of "throat trouble," and that these throats furnish the most fertile soil for the diphtheria bacillus to be found, the fact that two-thirds of all the positive first cultures in which the age was given came from children in the kindergarten and grammar schools forcefully illustrates the necessity of properly protecting these children by adequate school inspection. Only nineteen of these cases were over 30 years of age. The six that were over 40 were 42, 42, 48, 48, 51 and 80 years old respectively, and all were females except one.

That there is a definite history of exposure in only a small per cent. of cases is shown by an analysis of 862 cases in which information on this point was given by the physician. These cases include only the first culture made for diagnosis and not of any for release from quarantine. The results of the analysis are shown in Table 6.

TABLE 6.

SHOWING THE RELATION OF EXPOSURE TO THE DEVELOPMENT OF DIPHTHERIA.

	Positive.	Negative.	Total.
Patient known to have been exposed.....	70	75	145
Patient not known to have been exposed.....	152	318	470
Diphtheria in community but patient not known to have been exposed	87	160	247
Totals	309	553	862

. In only 70 cases (22.6 per cent.) of the 309 positive cases was there a definite history of exposure. In 87 (28.1 per cent.) there was a history of possible exposure on account of the presence of diphtheria in the community. But in 152, or practically 50 per cent. of the cases, no possible source of the infection could be discovered.

That it is not safe for a physician to depend on the appearance of the throat for diagnosis when a bacteriological examination can be had so easily is shown by Table 7.

TABLE 7.

SHOWING THE RELATION OF THE CLINICAL TO THE BACTERIOLOGICAL DIAGNOSIS.

Clinical Diagnosis.	Bacteriological Diagnosis.		
	Positive.	Negative.	Total.
Diphtheria	162	139	301
Not Diphtheria	88	247	335
Doubtful	71	176	247

From this table it is seen that the physician made a positive diagnosis of diphtheria in 301 cases, while bacteriological examinations revealed the organisms in only 162, or 53.8 per cent. In 335 cases in which the doctor diagnosed the condition something other than diphtheria, such as "tonsilitis," "ordinary sore throat," etc., examination at the laboratory proved that 88, or 26.2 per cent., were true diphtheria. The attending physician was unwilling to commit himself in 247 cases and called them doubtful. Of these, 71 cases (28.7 per cent.) were found to contain diphtheria bacilli. Hence, it would seem that if the physician depended solely on the gross appearance of the throat for diagnosis: (1) parents would have to buy expensive antitoxin needlessly in 45 per cent. of the cases pronounced diphtheria; and (2) that in more than 25 per cent. of the cases pronounced "not diphtheria" children would really need antitoxin and not get it.

Like all state laboratories, that of the Indiana State Board of Health has to depend on the express companies and United States mails to bring specimens to us. The inconvenience of this is most manifest in the case of diphtheria cultures, in which the physician is especially in need of quick service. An earnest effort has been made to obviate this difficulty as much as possible. It is our routine practice to make a smear from the swab as soon as received, examine it and report at once if diphtheria bacilli are unquestionably present. Probably less than 50 per cent. of positive cases can be diagnosed from the swab, hence, a culture is made from every throat specimen. The cultures are examined at the end of six or eight hours and if diphtheria bacilli are found the result is reported without further delay. But no culture is reported negative

until it has grown at least eighteen hours. This method places more work on the laboratory staff, but we believe it affords the physician quicker and more efficient service.

TYPHOID.

Out of the 1,508 specimens of blood examined for the Widal reaction, 327 (22.3 per cent.) were positive and 1,171 negative. Table 8 shows the number of examinations for each month:

TABLE 8.
WIDAL REACTIONS BY MONTHS.

	Positive.	Negative.	Total.
November	100	59	159
December	93	23	116
January	5	69	74
February	2	63	65
March	9	65	74
April	10	54	64
May	5	61	66
June	4	66	70
July	20	112	132
August	39	230	269
September	35	234	269
October	15	135	150
Totals	327	1,171	1,508

The microscopic method is the one employed here. In interpreting results the standard advised by Wilson is used, viz., all the bacilli in the hanging drop must have become completely immobilized and practically all of them drawn away from the margin and collected in *large* clumps within an hour and a half.

During the summer and fall Dr. Shimer has taken 32 blood cultures in cases of suspected typhoid. Of these, 10 were positive and 22 negative. A detailed account of this work by Dr. Shimer himself will be found in another part of this report.

I have examined the dejecta of a large number of the inmates of the State Reformatory, at Jeffersonville, to discover any typhoid-bacilli carriers among them, and have investigated an epidemic of typhoid at Greenfield. The results of these investigations are given in another place.

MALARIA.

The laboratory has had a rather unusual experience this year in the examination of blood for malarial parasites. Out of 194 examinations made, 17 proved positive. Table 9 shows the occurrence of these cases by months, and Table 10 the counties in which they occurred.

TABLE 9.

MALARIAS BY MONTHS.

	Positive.	Negative.	Totals.
November .....	..	18	18
December .....	..	13	13
January .....	..	..	..
February .....	..	..	..
March	1	9	10
April .....	..	8	8
May	2	15	17
June .....	..	14	14
July	5	16	21
August	2	25	27
September	6	28	34
October	1	31	32
Totals	17	177	194

TABLE 10.

SHOWING COUNTIES FROM WHICH BLOOD SMEARS CONTAINING MALARIAL PARASITES WERE RECEIVED.

County.	Cases.
Clark	1
Dubois	1
Fountain	2
Grant	1
Green	1
Marion	5
Noble	1
St. Joseph	1
Vanderburg	3
Vigo	1
Total	17

Dr. Schweitzer has analyzed these cases and investigated the status of malaria in this state. The results of her study will be found in another part of this report.

RABIES.

For the past three years an epidemic of rabies of no small proportions has existed in Indiana. Beginning with a few sporadic cases in 1906, the disease has spread to almost every section of the state. The epidemic seems to have reached its acme in the summer of 1908 and now appears to be abating somewhat, although the danger period is far from being past.

The records of the laboratory of the State Board of Health contain information concerning this epidemic that is by no means complete, but such as it is, it will be valuable as giving a reasonably good idea of the extent of the spread of rabies and the losses it has caused to the citizens of Indiana. It is doubtful if the laboratory records really show half the damage done by rabid dogs.

Since December, 1906, the brains of 240 animals have been examined, of which 145, or 60.4 per cent, were found to contain Negri bodies, and 95, or 39.6 per cent., not to contain them. The positive cases are distributed as follows: Dogs 123, cats 8, hogs 9, cattle 4, sheep 1. Between May 1 and August 31, 1909, 63 brains were examined. Twenty-one, or 33 $\frac{1}{3}$ per cent, were positive, and 66 $\frac{2}{3}$ negative. The small per cent. of positive findings during this period—only a little more than one-half the average per cent. for the entire three years—is due to several causes. In May of this year a woman died in Indianapolis with what was said to be hydrophobia. This case was given wide newspaper notoriety, particularly in the central part of the state. Persons who had been scratched by the teeth of over-playful, or licked by unduly friendly dogs, became panic stricken, killed the animal and sent its head to the laboratory for examination.

The number of heads received for diagnosis month by month in 1909 is shown in Table 11:

TABLE 11.

RABIES BY MONTHS.

	Positive.	Negative.	Total.
November	4	..	..
December	7	1	9
January	7	8	15
February	2	11	13
March	7	4	11
April	6	5	11
May	6	16	22
June	8	11	19

August	2	7	9
September	4	6	10
October	4	4	8
	<hr/>	<hr/>	<hr/>
	63	81	144

The method used for the diagnosis of rabies is that described by Dr. D. L. Harris, of the St. Louis city laboratory. Smears are made from a small piece of the hippocampus major by pressing it between two slides. The smear must be thin and uniform. It is placed at once, before it dries, in methyl alcohol, for one minute; washed in water; stained for three minutes in a saturated alcoholic solution of eosin which is at least two months old; washed in water; stained in Unna's methylene blue for eight seconds; washed in water; decolorized in ordinary alcohol until when examined with the low power the large brain cells appear a translucent blue with a dark blue nucleus and the red blood cells a coppery red. In decolorizing the specimen should not be allowed to dry while examining with the low power. The Negri bodies stained by this method are quite distinct, and the examinations are much more satisfactory than with either of the other two methods tried at this laboratory.

In cases in which the dog has bitten some human being and we are unable to find Negri bodies, a guinea pig is injected subdurally with an emulsion of the suspected brain. In only two cases has the biological test been positive when the microscopic examination was negative. One of these was in a case of a dog suffering from dumb rabies. On September 4 we received from Dr. Whitestone, of Huntington, the head of a dog thought to have the dumb form of the disease. In this we found a few tiny intracellular bodies that had the staining characteristics of Negri bodies. They were sharply defined and contained, as a rule, only one central brownish granule. The narrow zone of cytoplasm stained a deep pink. These bodies were too numerous and too uniform in appearance to be artifacts and we felt justified in pronouncing the brain positive. Unfortunately no guinea pig was injected with this brain. On October 10 we received from Dr. Whitestone the heads of two dogs affected in the same manner as the one received a month previous. After a very careful examination we were unable to find any Negri bodies. A guinea pig was injected subdurally October 13 with an emulsion of one of these brains, and died on October 25 with a well developed case of rabies. Dr. Whitestone informs me that

there have been two or three other dogs in Huntington similarly affected whose heads were not sent to the laboratory. An epidemic of dumb rabies is so rare that it is well worth recording.

No positive case occurred in Marion county until the winter of 1907 and 1908. Cases increased rapidly in number and by the summer of 1908 the epidemic was raging violently, 30 positive cases having been examined between July and September from Marion county alone. From the whole state only two positive cases were received at the laboratory in 1906, 11 in 1907, 70 in 1908, and 62 to October 31, 1909. If the last four months of 1909 supply cases in the same proportion as the first eight months, the number for this year will exceed that for 1908 by ten or fifteen. But there has been a steady decline in the number of positive cases received at the laboratory since January 1, 1909. In the first three months of this year 27 positive brains were received; in the second quarter 21; in the third quarter only 10, and this in the hot season—the so-called dog days, when many of the laity believe that dogs may develop rabies spontaneously.

It is this marked decline in the number of positive cases received during the summer that seemed to warrant the statement made in the beginning, that the epidemic seems to be abating. And yet even this apparent improvement can hardly be taken at its face value. It is discounted by the fact that many cases are never examined microscopically at all and, therefore, never get into the records. For instance, between March 11 and August 2, 1909, we received four positive dogs' brains from Mishawaka, while a local newspaper (South Bend Times) reports at least five cases in Mishawaka among animals diagnosed rabies clinically that were not sent to the laboratory at all. Several of these had been bitten by dogs which had been proved to have rabies by microscopic examination. Hence, this apparent lessening of the number of cases is no reason for relaxing the enforcement of muzzling and other anti-rabic ordinances.

For purposes of convenience the State Board of Health has divided Indiana into three sanitary sections—the northern, central and southern sections including the respective thirds of the state. In the northern sanitary section there have been 22 positive brains examined; in the central 99, and in the southern 24. Brains of animals proved to be rabid by microscopic examination have been received from forty counties. Positive brains have been received from nine out of the thirty-one counties in the northern section.

from eighteen of the thirty-three counties in the central section, and from thirteen of the twenty-eight counties of the southern section. It is thus seen that the central and southern portions of the state have suffered most from the epidemics. This does not show the true state of affairs in the northern part of the state, however, because many dogs' heads from there have been sent to Chicago.

The distribution of the positive cases of the last three years, by counties, is given in Table 12.

TABLE 12.

SHOWING DISTRIBUTION BY COUNTIES OF CASES OF RABIES RECEIVED AT LABORATORY SINCE DECEMBER, 1906.

Counties.	Cases.	Counties.	Cases.
Allen	1	Lawrence	5
Bartholomew	2	Madison	1
Boone	1	Marion	61
Clay	3	Marshall	1
Clinton	1	Morgan	1
Crawford	1	Noble	1
Daviess	1	Orange	1
Dubois	1	Parke	5
Grant	1	Pike	1
Green	3	Putnam	4
Hamilton	3	Scott	1
Hancock	2	Shelby	1
Hendricks	7	Spencer	3
Huntington	6	Starke	1
Jackson	2	St. Joseph	5
Jefferson	1	Tipton	2
Johnson	1	Vanderburg	3
Knox	1	Vermillion	3
Lagrange	1	Vigo	1
Lake	1	Wayne	1
Laporte	3		

There are very few localities in which the occurrence of one case is not followed by others. Local epidemics have been a prominent feature of the general one. In the first week in July, 1908, a strange dog appeared in Sharpsville, Tipton county, acted peculiarly, and fought with and bit several dogs belonging to residents of the town. On July 29, 1908, the head of a dog which had been bitten by the former animal was sent to the laboratory and was proved to have had rabies. This was followed on August 6, 1908, by the head of another dog which was found to be rabid.

On November 1, 1908, we received from Bedford, Lawrence county, the head of a dog which was proved to have rabies. Following this there came positive heads on December 15, 1908; January 20, 1909; February 13, 1909, and two on February 25, 1909.

March 11, 1909, we received a dog's head from Mishawaka and found Negri bodies in the brain. A series of cases (five of which were collected from the South Bend Times) then occurred as follows: March 26, March 31, May 4, May 17, June 9, June 23, and August 2.

The laboratory records show that at least 117 human beings have been bitten by rabid animals. This probably does not include one-third of the persons actually bitten. But even this number taking Pasteur treatment, at an average cost of one hundred dollars apiece, furnishes no small item of expense to the citizens of the state. In addition to this, the mortuary statistics of the State Board of Health show that in the three years from 1906 to 1908 there were thirteen deaths in Indiana said to have been due to hydrophobia. The diagnosis in none of these cases was verified by microscopic examination of the brain after death.

The records of the laboratory in regard to the loss of live stock are too meager to be of much value. Several individual cases of heavy loss have come to our notice. Mr. Kaler, of New Augusta, Marion county, lost twenty-one chickens, ten hogs and one cow. Mr. Dillon, of Calvertsville, Greene county, lost "over thirty pigs and a number of fattening hogs." A gentleman near Mishawaka, St. Joseph county, lost eight sheep. Mr. Deffenbaugh, township trustee at Mishawaka, stated in a recent interview in the South Bend Times that if the demand for reimbursement for stock killed by rabid dogs kept up the fund for that purpose—the so-called dog tax—would soon be completely exhausted.

When all the items of expense and loss are considered the epidemic of rabies has probably cost the state not less than \$100,000, probably many times as much. The remedy, which is being applied in some localities, is simple and effective. By enforcing a muzzling ordinance throughout Great Britain the number of cases of rabies was reduced from 672 in 1895 to none in 1900. The disease has become unknown in Great Britain so thoroughly did muzzling stop rabies. Professors had to import a dog's brain from America last year to demonstrate Negri bodies to medical students. It is to be hoped that the people of Indiana may follow the example of the English.

GONORRHEA.

The number of specimens of pus from cases of suspected gonorrhea shows a marked increase over last year—349 this year, as compared with 178 last. This increase may be due to several causes. Physicians are learning that it is not at all easy to determine when a patient has entirely recovered from this disease. Many specimens were taken after massage of the prostate in cases that were apparently well. The state law requiring that a man have “a clean bill of health” in order to obtain marriage license may also have had some slight influence in increasing the number of specimens of this kind examined.

Table 13 shows the number of specimens from each sex and the result of the examination.

TABLE 13.

SHOWING RESULTS OF EXAMINATION FOR GONOCOCCI, BY SEXES.

	Positive.	Negative.	Total.
Males	104	144	248
Females	40	61	101
Totals	144	205	349
Per cent	41.2	59.8	

Special mention should be made of one or two specimens. One was from a young married woman and contained enormous numbers of gonococci. The husband had had gonorrhea a few months before marriage and had been very strongly advised by his physician against taking such a step. The discharge had ceased, however, and he thought himself cured, in spite of the doctor's warning to the contrary. The result has already been given and needs no comment.

Two specimens were from young female children—one from a 3-year-old girl, the other from a “baby girl” whose age was not given. Both contained gonococci in great numbers. The source of the infection was either not known or at least not given. Another specimen was from a case of ophthalmia neonatorum and contained many gonococci.

MISCELLANEOUS.

A large number of specimens of a miscellaneous character were examined during the year. They are classified in Table 14:

TABLE 14.

CLASSIFICATION OF MISCELLANEOUS SPECIMENS.

Specimen.	Number.
Blood not for malaria or Widal.....	98
Urine	260
Feces	105
Pus	89
Cancer	37
Sarcoma	11
Other pathological tissues	139
Milk	65
Water	8
Ascitic fluid	5
Pleuritic fluid	6
Cerebro-spinal fluid	9
Stomach contents	15
Miscellaneous	7
Total	854

Pathological Tissues: We do not believe it is just to the taxpayers or to private laboratories for a state institution to examine pathological tissues for every one who asks for it. The public will receive little, if any, benefit if a growth on a man's face is found to be a cancer instead of a wen. The services of the laboratory in such cases are purely personal and should not be performed except in those cases in which the patient is entirely unable to pay a private laboratory for such an examination. This is the rule by which we try to be guided. In actual practice, however, it is a difficult rule to enforce.

There were 187 specimens of pathological tissue examined during the year, of which 37 were cancer, 11 were sarcoma, and the remainder various lesions and tumors not easily classified in small space. One very interesting specimen was a turkey's liver which was found to contain several large tuberculous areas.

Feces: Of the 105 specimens of feces examined, several proved particularly interesting.

At the meeting of the Dairymen, in September, the carcass of a tuberculous cow was shown. After the animal was killed Mr. H. E. Barnard sent scrapings from the rectum to the laboratory. Tu-

bercle bacilli were found in goodly numbers. This animal was in very fair physical condition, and the ease with which milk from a cow of this kind could become contaminated is evident.

A number of pseudo gall stones caused by the administration of large doses of olive oil, were sent to the laboratory. Judging from letters received these soap-like bodies frequently cause patients and physicians considerable concern.

Several unusual specimens were received from Dr. C. F. Fletcher, of Sunman. They consisted of fly larvæ that a patient of his had passed at intervals. The larvæ were sent to the Bureau of Entomology of the United States Department of Agriculture, where experts pronounced them probably a variety of Diptera, known as *Sarcophaga*. These are fruit flies. The patient gave a history of having frequently eaten raw prunes and dried peaches, and there seemed to be a rather definite connection between the eating of the fruit and the passing of the larvæ in the stools.

One most interesting specimen was found in the stool of a nine-months-old infant, and consisted of pseudo-parasites which result from eating bananas. These consist of a double chain of small black or brown segments. Many of the chains will be found broken up, but in the typical ones a fine spiral (conducting tubules) will be found lying between the double chain of segments. Dr. Jesse Myer, of St. Louis, has shown that these originate from the action of the digestive juices on certain cells in the banana.

Urine: Of the 260 specimens of urine examined only three contained tubercle bacilli, and one typhoid bacilli. The history of one case may be mentioned. The first specimen of urine from this patient was clear and we were unable to find tubercle bacilli. The physician then massaged both kidneys and these organisms were present in the urine in large numbers.

Milk: Typhoid bacilli were isolated from two of the samples of milk examined. These were in a series of bottles collected from South Bend dairies. The milk was plated out in both Conradi and Endo media and subcultures made from a large number of suspicious looking colonies in the plates from each sample. From each of the two specimens a bacillus with the cultural and morphological characteristics of *B. Typhosus* was isolated. The cultures from the two samples resembled each other in every respect and had the following characteristics:

Morphology: Actively motile bacilli with round ends, occurring singly or occasionally in pairs end to end, and losing the stain by Gram's method.

Cultural Characteristics:

Agar Slants—Pearly gray, translucent, moist, fairly luxuriant growth that spreads slightly from the needle streak.

Dextrose Agar—Pearly gray surface growth; slight growth along needle track in media; no gas formation.

Gelatin—Surface and stab growth fair. No liquefaction of medium.

Broth—Uniform clouding of medium; very small amount of easily diffusible sediment; no scum.

Litmus Milk—Acid; no coagulation; no proteolysis; no gas.

The above findings were reported to the health officer of South Bend, and he and Mr. Tucker, an inspector of the Pure Food and Drug Department, made a thorough inspection of the dairies supplying the city.

Trichinosis: During the month of February we received at the state laboratory the tissues from autopsies on two patients dead of trichinosis, and, in addition, reports of eight other cases which did not prove fatal. Two of the cases, one of them fatal, were under the care of Dr. E. Ray Royer, of North Salem, Indiana, the other eight under the care of Dr. C. N. Brown, and later of Dr. L. D. Holliday, of Fairmount, Indiana.

In nine of the cases there was a definite history of the patient's having eaten raw or semi-cooked sausage; the tenth had eaten meat from the shoulder region. The patients ranged from 3 to 49 years of age. Four were males and six females. The two fatal cases were in a boy of 10 and a girl of 17.

Before Dr. Brown's case proved fatal we received from him a sample of sausage from the lot of which the patients had eaten. No trichinæ could be found. Later, Dr. Brown sent a piece of meat from the shoulder region and trichinella spiralis was found easily.

There was a history that on the farm where the Fairmount cases lived, the hogs were kept in a badly ventilated and poorly lighted barn. The boys of the family were said to have frequently caught rats in the barn and to have thrown them to the hogs. Through the courtesy of Dr. L. D. Holliday we were able to procure two rats from this barn. A careful search in the diaphragm and muscles of their bodies failed to reveal trichinæ.

The skeletal muscles from both autopsies contained trichina spiralis in great numbers. In Dr. Royer's case there was a round celled infiltration of a very high grade. The livers from both cases

showed rather marked fatty infiltration. In the kidneys from Drs. Brown and Holliday's patient there was an acute parenchymatous nephritis of a severe type.

INVESTIGATION AT THE STATE REFORMATORY.

During the fall of 1908 a severe epidemic of typhoid fever broke out among the inmates of the State Reformatory at Jeffersonville. About seventy-two persons were affected. An examination at the time indicated that the epidemic resulted from the pumping of Ohio river water into the water mains on the occasion of a fire at the reformatory. On account of the danger of the disease becoming endemic from the presence of typhoid-bacilli carriers it seemed wise to examine the dejecta of all the ex-typhoid fever patients in the institution.

On the request of Dr. J. N. Hurty, Secretary of the State Board of Health, Mr. Whittaker, then superintendent of the Reformatory, gave his consent for the work to be done. Accordingly, I communicated with Dr. H. H. Smith, physician to the institution, and all arrangements were made for the work.

Dr. Smith had planned and executed all the details of preparation with great care. He collected the stools of each ex-patient in sterile vessels and the urine in sterile bottles. These were brought together in a convenient place and were ready when I reached the Reformatory. Sixty-four specimens were obtained.

Cultures were made directly from the feces and urine into tubes of lactose-bile. These were taken to the laboratory and incubated over night. On the next morning plates were made from each tube, Hesse agar being the medium used. This is a semi-solid medium, and in it typhoid bacilli, on account of their greater motility, form very large thin colonies, thus distinguishing them from colonies of *B. Coli*, which are smaller and more compact. Cultures were made from each large thin colony on the plates. Not one of them proved to be typhoid bacilli, however. Many were *B. Pyocyaneus* and some were *B. Coli*.

On the whole this medium did not prove very satisfactory. The size of the colonies, which is the characteristic feature with this medium, seems to depend not so much on the type of organism as on the position of the colony in the medium. A colony of *B. Coli*, or almost an other organism, growing on the lower surface of the agar, between it and the bottom of the plate, will spread out quite rapidly and form a colony resembling very closely that of

B. Typhosus. However, since cultures were made from all large, suspicious looking colonies, it is probable that if typhoid bacilli had been present they would have been found.

The failure to find a bacilli-carrier among these sixty-four patients is not especially surprising. German investigators have found that only 2 to 4 per cent. of all ex-typhoid patients continue to excrete typhoid bacilli in their stools for more than eight or ten weeks after the attack of the disease. On this basis, one would have expected to find less than three of these patients still excreting the bacilli. But it has been found also that in a large number of cases, including both sexes, about three out of every four are females. Hence the chance of finding a bacilli-carrier among these sixty-four male patients was rather small. The danger such an individual would have been to the other inmates amply justified the investigation.

INVESTIGATION OF THE TYPHOID EPIDEMIC AT GREENFIELD, INDIANA.

On October 11 Mr. Hughes, of Greenfield, brought a specimen of milk to the laboratory to be examined for evidence of infection with typhoid bacilli. He described the epidemic of typhoid fever that had existed in Greenfield for the past two months, and suggested that some one from the State Board of Health investigate the situation and, if possible, discover the source of the infection. Accordingly, on the request of Dr. J. N. Hurty, Secretary of the State Board of Health, I spent Tuesday and Wednesday, October 19 and 20, in Greenfield studying the conditions there.

On arriving I went at once to Dr. Milo Gibbs, the city health officer and found him enthusiastic in the matter and willing to do anything possible to help in the undertaking. From him I obtained the names and street addresses of forty-nine persons who had had typhoid fever during the year. Dr. Gibbs was just recovering from an attack of "grip" and could not go with me on the tour of inspection.

The work was begun by an inspection of the City Water Works. The water is obtained from flowing wells, averaging over one hundred feet in depth. The water from each well is conducted to the pumping room through underground pipes and is forced directly into the city mains. Immediately to the east of the pumping house is a large cement reservoir which is below the surface of the ground and is covered with a good roof. The assistant engineer, who was the only employe at the plant at the time, declared that the sides

and bottom of the reservoir were solid cement and that there was no iron pipe extending up through the center of the floor, as had been reported in the newspapers. The water in the reservoir was somewhat stained with rust from the inflow and outflow pipes. The reservoir is kept filled for use in case of fire. The water supply of the city appeared to me to be excellent.

Forty-two of the forty-nine patients were seen in person. Such inspection of the premises was made as circumstances would permit and information was obtained in regard to the following points:

Age and sex of the patient.

Date of onset, duration and termination of the disease.

Have other cases occurred in same family or same house within a year?

Water and milk supply.

Has the house sewer connection?

If not, what kind of privy?

Is house screened?

Have flies been especially bad this summer?

Had patient been out of city within a month previous to onset of illness?

Such other general information as was obtainable.

Of the 49 patients, 29 were males and 20 females. Thirteen were under fifteen and 28 under twenty years of age. Ten cases appeared between the 16th and 31st, and seven between the 1st and 15th of August. Six cases appeared in the first half of September and five in the last half. The remaining cases occurred as follows: Three in October, five in July, two in June, two in May, one in January and one in October, 1908. There was no time at which a considerable number of cases occurred within a few days of each other that could have been traced to a common source.

Twenty-one (50 per cent.) of the patients seen, had been away from Greenfield within the month previous to the onset of the illness. Two were traveling men and were away from home a great deal. Six had spent at least one day in Indianapolis, and four had been to other Indiana towns. Three had visited in Ohio and one in Michigan. Seven had been in the country around Greenfield—two of these had also visited in Indianapolis. Thirty-one used city water and eleven had wells, all but two of which were driven. Thirty families, representing twenty-seven patients, had no sewer connections in their houses. Eighteen of these families had open surface privies in the backyard, and two had privy vaults. Seven homes with no sewer connections had wells and privies within

from thirty to eighty feet of each other. One house with a dug well and surface privy was not screened, and the flies were said to have been very bad. The remarkable thing in this instance was that the family had had only one case of typhoid this summer.

Answers to the question in regard to flies varied too much to be of much value. In only seven houses, in which there were ten cases, two of which were fatal, were the flies said to have been bad.

No facts could be elicited that cast any suspicion on the milk supply. Fourteen patients had used Wicker's milk, eleven had used Thompson's, and the remainder had gotten milk from various dairies or used condensed milk. Only one patient claimed to drink much milk; many others rarely touched it.

It is to be noticed that two of Mr. Wicker's children had typhoid fever in May. He was not at that time in the milk business and did not acquire his present business for some time after the children had recovered. Mr. Wicker gets his milk from Mr. Hogan, who has a dairy farm on Brandywine creek, south of town. The milk is brought to town in large cans and is bottled in a building in which the sanitary conditions are fair. The children were said to have nothing to do with the bottling or handling of the milk, although they come into the building occasionally. The sample of milk brought by Mr. Hughes was from this dairy and showed nothing indicative of contamination. The epidemic did not have the characteristics of one that was milk-borne.

Of the 21 who had not been out of the city, 20 (seventeen families) had no sewer connections in their houses and had privies. Of the 21 who had been out of the city 11 had sewer connections and 10 had privies. In three instances there had been a case of typhoid fever in the same house within the year. From the above figures it is seen that 31 (74 per cent) of the 42 cases investigated lived in parts of the city not supplied with sewers. Of the 7 cases not seen personally, the street address of 2 could not be learned. One lived just outside the city limits and therefore had no sewers, and 5 lived in parts of the city not supplied with sewers. Hence, of 47 cases whose street address was known, 37, or practically 80 per cent of the total number, lived in houses with no sewer connections and used privies, the majority of which were open and on the surface. The cases were rather generally distributed over the city.

The epidemic was not sudden in its onset, it followed no one milk route, but cases occurred about equally on all, and it affected persons who claimed to drink little or no milk. Hence it had none

of the characteristics of a milk-borne epidemic. It affected persons who used city water as well as those who used well water. The majority of the patients used city water, but an inspection of the pumping plant and bacteriological examinations of the water itself, gave no reason to suspect this as the source of infection.

The feature which the greater number of cases (80 per cent.) had in common was lack of sewer connections, the use of open, surface privies, and flies. It is true that all but one house were screened, but where there are several children in a family screens do not mean complete absence of flies, but their presence in such diminished numbers as to be endurable. This was the case in a number of the houses I visited in which cases of typhoid fever had occurred.

Flies do not travel far from their place of birth, and in thickly settled localities their wanderings are frequently limited to a very small area. J. T. C. Nash, in a recent number of the *Journal of Hygiene*, has the following to say concerning the migration of flies: "From my own observations I find that from a large breeding place . . . they will travel in countless battalions to the nearest houses, which may be two hundred or three hundred yards distant. . . . Each street and terrace of houses forms a place of arrestment provided there is abundance of pabulum, whether in the nature of filth or ordinary articles of human diet." The short migration of flies may account for the fact that most of the cases (80 per cent.) of typhoid fever were limited to the non-sewered districts.

As already stated, the cases of typhoid occurred with increasing frequency up to the middle of August and then slowly decreased. The excreta from one typhoid patient thrown upon the ground in the non-sewered district could be easily carried by flies to persons living near by. The more cases of typhoid there were the more germs of the disease there would be for flies to carry to healthy persons and the more rapidly the cases would increase in number. This was the state of affairs in Greenfield until the middle of August, when the number of cases began to decrease gradually. "Towards the end of August, though flies are often very numerous, they appear to pay less attention to food and more to reproduction." This observation of Nash will account for the gradual decrease in the number of cases just before and after the first of September. During the so-called typhoid season, the temperature is such that the growth of bacteria deposited by flies in milk and other food products is especially favored, so that a relatively small "dose"

of bacteria deposited by a fly may increase many fold in a few hours.

Nothing was found that would connect the epidemic with either the milk or water supply of Greenfield. Absence of sewer connection and the presence of open surface privies and flies, seem to furnish the best explanation of the epidemic.

RESULTS OF FORTY-SIX BLOOD CULTURES.

WILL SHIMER, ASSISTANT PATHOLOGIST.

During the year 1909, 46 blood cultures on 41 patients were made. Of these 41 patients a provisional diagnosis of typhoid fever had been made in 25 cases, four of which were ultimately proven not to be typhoid, leaving 21 positive cases. The blood of 17 patients was examined before the third week of the disease and of these, nine were found to contain typhoid bacilli. Of the other two positive cultures, one was from a patient suffering from a relapse, the other from a patient whose previous history could not be obtained. The earliest case in which a blood culture was positive, was on the third day, the latest in the third week. The blood cultures from two relapses was positive in one case only. Blood cultures were positive five times when the Widal was negative or not positive until later in the disease.

The following table shows the results in tabular form:

TABLE 15.

Total number of blood cultures	46
Total number of patients	41
Total number of cases proven to be typhoid	21
Total number cultures taken before third week of disease	17
Total number of positive blood cultures	11
Positive cultures in first week	4
Positive cultures in second week	5
Total number of positive Widal's	14

These results show that a positive blood culture can usually be obtained before the third week of the disease and early in the relapse and that typhoid bacilli can often be isolated from the blood before the Widal is positive.

The method of making the blood examinations is as follows: The skin over the front of the elbow is made sterile by alcohol and ether, a tourniquet having been previously put about the arm above the elbow. The tourniquet should not be applied too tightly. A

large needle attached to a 10 C. C. Luer's or Burrough-Wellcome syringe is forced gently into one of the large veins at the front of the elbow and 10 to 12 C. C. of blood are withdrawn. The blood is mixed immediately with 10 C. C. of Epsteins Oxalate Solution and taken to the laboratory, where it is plated in 6 or 8 Petri dishes with 2 per cent. glucose agar, 0.9 per cent. acid to phenolphthalin. The typhoid colonies have a characteristic appearance in glucose agar containing blood. They are pin-point in size and have a greenish ring about them. As soon as the colonies appear on the plates subcultures are made on slant agar, subcultures are made from this in plain broth, litmus milk and stab cultures in glucose agar. If the bacilli are very motile in plain broth, produce a very slight amount of acid and no coagulation in milk, no gas in glucose agar and are Gram-negative one can be fairly certain that they are typhoid bacilli.

Under favorable circumstances a reasonably reliable diagnosis can be arrived at from a blood culture in 48 hours, for if an actively motile, Gram-negative bacillus is isolated from the blood of a patient, it practically proves that the condition is typhoid fever.

RESULTS OF 132 CALMETTE TESTS FOR TUBERCULOSIS.

WM. SHIMER, ASSISTANT PATHOLOGIST.

The early diagnosis of tuberculosis is important both for the patient and the public health. Tubercle bacilli appear late in the clinical course of the disease, at the time when a cure is much more difficult than if a diagnosis could have been made earlier.

The injection of old tuberculin has been used most in the past to make an early diagnosis of tuberculosis. But this method requires considerable time and careful observation by a competent nurse.

Three tests have been invented to meet the need for a simple and accurate method of diagnosing tuberculosis, viz: the Calmette, Von Pirquette and Moro tests. Each of these possesses certain peculiar advantages. However, in a large series of tests they give practically the same number of positive and negative reactions. During last year, we made 132 Calmette tests on 125 patients at the Indianapolis City Hospital. Our cases were divided into three different classes as follows:

Those positively tubercular (sputum contained T. B.). 34, 80 per cent. positive.

Those suspiciously tubercular, 58, 48 per cent. positive.

Well cases, 18, 9 per cent. positive.

Three of the first class were moribund and gave no reaction. A few of the second class had had tuberculosis and were apparently well, and gave no reaction. Three of the third class were examined later and suspicious areas were found in their lungs. An advanced case of pulmonary tuberculosis at first test gave no reaction, but recated violently when a second instillation of tuberculin was received into the same eye. A well person received four instillations of tuberculin into the same eye, without any reaction.

CONCLUSIONS.

First, The conjunctival inflammation following the instillation of tuberculin into the eyes almost certainly indicates an active tuberculous process somewhere.

Second, The Calmette test is very valuable as confirmative evidence in the diagnosis of tuberculosis. All well persons and those suspected of having tuberculosis who give positive reactions should be examined carefully for positive signs of tuberculosis.

Third, A positive reaction gives no evidence as to the location of the disease.

NOTES ON THE HISTORY AND PRESENT STATUS OF MALARIA IN INDIANA.

ADA E. SCHWEITZER, M. D., ASSISTANT BACTERIOLOGIST.

Between March and October, 1909, malarial parasites were found in seventeen specimens of blood sent to the State Laboratory for examination.

On account of the generally accepted opinion that there is practically no malaria in Indiana, it seemed advisable to investigate the situation more thoroughly. Accordingly, letters were sent by Dr. Simonds to the physician longest in practice in each county, asking for information concerning the prevalence of malaria in the past, and the number of cases, and the prevalence in his vicinity this year.

Replies were received from Lake, Newton, Starke and Marshall counties along the Kankakee river; from White, Cass, Miami, Huntington and Jay counties just north of the central sanitary section; from Marion, Hendricks, Johnson, Delaware, Wayne and Monroe counties in the central section; from Tippecanoe, Mont-

gomery, Fountain, Vigo, Knox, Gibson, Posey, Pike, Dubois, Greene and Jackson counties along the White and Wabash rivers and their tributaries, and from Dearborn, Crawford and Spencer counties along the Ohio.

Beginning with the earliest settlement of the state, malaria steadily increased in destructiveness up to 1855-65 when the entire state was affected, and then decreased gradually until the present time. Epidemics of the disease swept over the state with a sort of wave-like regularity. The worst years were those of heaviest rainfall which, by a curious coincidence, fell during 1845, 55, 65 and 75. With Marion county as its center, the epidemic of 1854 and 1855 involved the whole central district. Every part of central Indiana, high or low, wet or dry, was affected to a greater or less degree. In meteorological conditions these two years had nothing in common, for the summer of 1854 was extremely hot and dry, September being the hottest month. It was, indeed, the hottest September old residents can recall. During 1855 the rainfall was exceedingly abundant. But in both years malaria was extremely common and fatal.

The last bad epidemic of malaria in this district was in 1865. By 1885 the disease had practically disappeared.

That part of Indiana which is broken by low hills and was densely covered in early days by primeval forests, was little troubled by malaria. But the great alluvial plain of the Wabash Valley was one of the famous malarial districts of the world. The disease was endemic there. The inundations of spring and summer left bayous and ponds of shallow water to become the breeding places of innumerable mosquitoes. In the other river valley in the southern part of the state the epidemics were milder. Along the old Wabash canal fevers of the severest type prevailed until it was finally drained and filled in. The northern part of the state, except in the region of the Kankakee marshes, has been practically free from malaria for years.

In almost every instance, the cause assigned for the steady decrease and the almost complete stamping out of malaria in Indiana, was the drainage of swamps and lowlands. The thousands of dollars spent in this state on surface and tile drains has not only increased the sum total of the state's wealth by reclaiming waste lands; it has also made it possible for a thrifty farming class to maintain a high standard of efficiency for work on account of the freedom from the anemia-producing, energy-destroying malaria. This investment has paid larger dividends than can be estimated in mere money.

In the early days the pernicious forms of malaria, especially the so-called "congestive chills," were exceedingly common. Choleric and comatose forms were also frequently seen. The "icteric type" was less common and was believed to have been imported from the tropics. Later the more typical intermittent cases prevailed. Numerous and severe complications and sequelæ are mentioned, such as recurrent hemorrhages from the lungs and bowels and necrosis of bone. Marked enlargement of the liver and spleen were to be found any day in general practice.

The remedy par excellence was quinine, which at first was given in small doses and the fevers were prolonged. Later when the degree of tolerance for it was learned, enormous doses were given.

In 1892, although examinations were then made at Johns Hopkins in Baltimore, and in New Orleans and in a hospital in Chicago, no examinations for the malarial parasite were made in cases reported to the Indiana Medical Society by Dr. H. O. Pantzer. In 1893, Dr. Theodore Potter made his first examination of a specimen of blood from a Dr. McShane, recently from Arkansas, and found the crescent forms in the blood.

After the Spanish-American War, with the return of the soldiers from the South, Cuba and Porto Rico, a "wave" of malaria swept over the state. While the returned troops were stationed at Camp Mount, Drs. Dodds and Schaeffer studied a large number of cases carefully. They classified fifty of their cases as follows: Tertian 31, quartan 10, aestivo-autumnal 6, algid 3. At this time nothing was known of the life history of the malarial parasite outside the body and the relation of the mosquito to the disease had hardly been dreamed of.

Within the last three years, Dr. George W. Marshall, of Kokomo, has reported an epidemic of malaria in Howard and Cass counties with the center of infection in the vicinity of Young America. The epidemic was at its worst in 1907 and was investigated by Dr. Helene Knabe, then assistant superintendent of the laboratory. The very interesting results of her investigation will be found in the Report of the Indiana State Board of Health for 1907.

Since March, 1909, seventeen specimens of blood received at the State Laboratory were found to contain malarial parasites. This is a greater number of positive specimens than had been received during the entire previous history of the laboratory. The distribution of these cases by counties is shown in the accompanying table:

<i>County.</i>	<i>Cases.</i>
Clark	1
Dubois	1
Fountain	2
Grant	1
Greene	1
Marion	5
Noble	1
St. Joseph	1
Vanderburgh	3
Vigo	1
Total	17

Of these cases, five were said to have acquired the infection outside the state—two in Arkansas, two in St. Louis, and one indefinitely, in the South. In four cases the place of infection was not stated. In the remaining eight cases it was definitely stated that the infection was acquired in Indiana. These eight cases occurred in St. Joseph, Noble, Greene, Montgomery, Fountain, Vigo and Vanderburgh counties. With the exception of Noble county, these counties are rather closely related to some important river.

Of the seventeen cases, six were females and eleven males. Their ages varied from 4½ to 72 years, the majority being under 35.

Two specimens of blood contained aestivo-autumnal parasites. The patients got their infection in Arkansas and St. Louis, respectively. Ten contained tertian parasites, while in five it was not possible to accurately determine the type.

These seventeen cases do not by any means represent the total number occurring in Indiana during the year. But they do furnish positive evidence that the disease has not been completely eradicated as many physicians claim has been done. The anopholes mosquito is to be found in almost every part of the state, and every patient, whether he imported the disease or acquired here, is a source of infection. Hence, we have the two factors necessary to the spread of malaria. This is not written in the belief that malaria will ever be prevalent in Indiana again. The state is too well drained and the people too progressive to permit it. But physicians should keep in mind that malaria does exist in this state and not allow an incorrect, preconceived opinion as to its absence to influence their diagnoses in the occasional sporadic cases they are likely to meet at any time during the summer or fall.

SPUTUM EXAMINATIONS BY COUNTIES.

	Pos.	Neg.		Pos.	Neg.
Adams	4	19	Lawrence	2	15
Allen	8	30	Madison	28	80
Bartholomew	11	35	Marion	103	348
Benton	3	8	Marshall	4	11
Blackford	5	17	Martin	18	20
Boone	16	37	Miami	14	23
Brown .....	..	..	Monroe .....	..	..
Carroll	6	26	Montgomery	19	41
Cass	6	10	Morgan	9	20
Clark	3	4	Newton	1	4
Clay	6	29	Noble	7	25
Clinton	9	23	Ohio .....	..	..
Crawford	2	6	Orange	1	2
Davless	11	38	Owen	5	16
Dearborn	6	11	Parke	6	16
Decatur	7	27	Perry	2	2
Dekalb	5	30	Pike	5	8
Delaware	20	59	Porter .....	..	1
Dubois	4	12	Posey	4	3
Elkhart	11	55	Pulaski	3	12
Fayette	5	23	Putnam	5	15
Floyd	4	21	Randolph	16	44
Fountain	10	25	Ripley	3	12
Franklin	3	11	Rush	5	15
Fulton	3	14	Scott	1	3
Gibson	4	18	Shelby	10	18
Grant	27	61	Spencer	5	18
Greene	12	33	Starke	2	9
Hamilton	10	41	Steuben	3	10
Hancock	30	52	St. Joseph	3	21
Harrison	9	11	Sullivan	6	23
Hendricks	52	75	Switzerland	1	15
Henry	12	38	Tippecanoe	5	11
Howard	13	38	Tipton	15	27
Huntington	21	47	Union	3	7
Jackson	12	24	Vanderburgh	38	71
Jasper	4	9	Vermillion	5	22
Jay	8	13	Vigo	14	55
Jefferson	5	23	Wabash	16	32
Jennings	5	10	Warren	6	12
Johnson	6	38	Warrick	1	2
Knox	16	29	Washington	1	7
Kosciusko	6	14	Wayne	37	105
Lagrange	13	25	Wells	4	12
Lake	10	31	White	5	15
Laporte	6	33	Whitley	7	23

DIPHTHERIA EXAMINATIONS BY COUNTIES.

	Pos.	Neg.	No. Growth		Pos.	Neg.	No. Growth
Adams .....	..	..	..	Lawrence	2	4	..
Allen	7	..	..	Madison	32	81	..
Bartholomew	5	4	..	Marion	68	292	..
Benton	10	32	..	Marshall	2	5	..
Blackford	2	..	..	Martin .....	..	..	..
Boone	1	3	..	Miami	11	20	..
Brown .....	..	..	..	Monroe .....	..	..	..
Carroll	1	3	1	Montgomery	1	5	..
Cass	1	3	..	Morgan	1	2	..
Clark	7	2	..	Newton	3	1	..
Clay	12	16	..	Noble	38	124	5
Clinton	16	41	..	Ohio .....	..	..	..
Crawford .....	..	2	..	Orange .....	..	1	..
Davies .....	..	11	..	Owen	2	..	..
Dearborn	4	..	..	Parke .....	..	4	..
Decatur	5	9	1	Perry .....	..	..	..
Dekalb .....	..	2	..	Pike	9	7	..
Delaware	14	41	2	Porter	2	2	..
Dubois	1	..	..	Posey	1	5	..
Elkhart	3	12	..	Pulaski .....	..	7	..
Fayette .....	..	..	..	Putnam	6	10	2
Floyd .....	..	2	..	Randolph	3	6	..
Fountain .....	..	6	..	Ripley	1	..	..
Franklin	1	2	..	Rush	9	5	..
Fulton	3	1	..	Scott	4	3	..
Gibson	1	2	..	Shelby	1	5	..
Grant	2	9	..	Spencer	2	14	..
Greene	2	..	..	Starke .....	..	2	..
Hamilton	2	3	..	Steuten	1	1	..
Hancock	10	38	..	St. Joseph	1	3	..
Harrison	2	4	..	Sullivan .....	..	..	..
Hendricks	16	32	..	Switzerland .....	..	..	..
Henry	1	2	..	Tippecanoe	8	4	..
Howard	1	..	..	Tipton	2	6	..
Huntington	1	4	..	Union .....	..	1	..
Jackson	1	4	..	Vanderburgh	2	4	..
Jasper	3	4	..	Vermillion	6	2	..
Jay	1	..	..	Vigo	8	21	..
Jefferson	6	5	..	Wabash	15	14	1
Jennings	2	4	..	Warren	1	2	..
Johnson .....	..	1	..	Warrick	1	..	..
Knox	3	3	..	Washington	22	8	2
Kosciusko .....	..	1	..	Wayne	1	17	..
Lagrange .....	..	2	..	Wells	1	1	..
Lake	11	7	..	White	1	..	..
Laporte	2	1	..	Whitley	1	7	..

WIDAL EXAMINATIONS BY COUNTIES.

	Pos.	Neg.		Pos.	Neg.
Adams .....	..	6	Lawrence .....	..	..
Allen	8	25	Madison	5	25
Bartholomew	1	11	Marion	65	320
Benton	1	2	Marshall	2	5
Blackford	2	2	Martin .....	..	..
Boone	1	8	Miami	1	6
Brown .....	..	..	Monroe .....	..	..
Carroll	1	8	Montgomery	1	3
Cass	1	5	Morgan .....	..	8
Clark	17	14	Newton .....	..	8
Clay	2	5	Noble	1	20
Clinton	2	9	Ohio .....	..	4
Crawford	1	6	Orange .....	..	2
Daviess	1	6	Owen	1	4
Dearborn	1	14	Parke	1	3
Decatur	6	21	Perry	1	14
Dekalb .....	..	5	Pike	2	10
Delaware	3	12	Porter .....	..	..
Dubois	2	3	Posey .....	..	..
Elkhart	2	13	Pulaski .....	..	3
Fayette	3	11	Putnam	6	16
Floyd .....	..	7	Randolph	3	11
Fountain	2	9	Ripley	2	14
Franklin	3	10	Rush	4	23
Fulton	3	1	Scott .....	..	..
Gibson	1	4	Shelby .....	..	4
Grant	10	32	Spencer	8	28
Greene .....	..	4	Starke	1	5
Hamilton	5	20	Stauben .....	..	..
Hancock	1	10	St. Joseph	6	29
Harrison	3	4	Sullivan .....	..	2
Hendricks	8	34	Switzerland .....	..	4
Henry	3	22	Tippecanoe	2	12
Howard .....	..	2	Tipton	2	18
Huntington .....	..	8	Union	1	4
Jackson .....	..	6	Vanderburgh	2	27
Jasper .....	..	6	Vermillion .....	..	3
Jay .....	..	2	Vigo	8	34
Jefferson	5	14	Wabash .....	..	8
Jennings	4	13	Warren .....	..	2
Johnson	1	8	Warrick .....	..	..
Knox	3	18	Washington .....	..	1
Kosciusko	1	11	Wayne	11	37
Lagrang	1	6	Wells .....	..	4
Lake	3	8	White	5	19
Laporte	5	32	Whitley .....	..	5

OUTFITS.

During the year 9,226 outfits have been sent to physicians, as follows:

TABLE 16.

Sputum	4,240
Diphtheria	1,956
Widal	2,128
Malaria and special	902
Total	9,226

During September and October alone, 2,541 outfits were sent out. This is the largest number of outfits requested in any two months since the establishment of the Laboratory. The increase is due in part, to the personal work done among physicians, county and district societies and by members of the Laboratory staff.

In September of this year a circular was sent to the physicians of the three tiers of counties in the southern part of the State as well as to those in several counties in other sections. This letter called attention to the work of the Laboratory, specified the kinds of examinations made here and extended an invitation to physicians to make use of the facilities offered them for aid in diagnosis. The results have been encouraging. In this way we have reached many physicians whom it has been impossible to see personally at meetings of medical societies. This letter has had much to do with the increase in the number of requests for outfits during the last two months.

In conclusion, I may say that the work of the Laboratory has shown a healthy growth, that its field of usefulness has been extended and that the results of the year's work are very gratifying in every respect.

Respectfully submitted,

J. P. SIMONDS,

Superintendent.

REPORT
OF THE
CHEMICAL DEPARTMENT
LABORATORY OF HYGIENE

Year Ending September 30, 1909.

H. E. BARNARD, B. Sc.,
Chemist in Charge and State Food and Drug Commissioner.

H. E. BISHOP, B. Sc., Food Chemist.

WM. D. MCABEE, Assistant Chemist.

G. C. THOMAS, Assistant Chemist.

I. L. MILLER, B. A., Drug Chemist.

J. H. BREWSTER, Water Chemist.

J. J. HINMAN, JR., Assistant Chemist.

FOURTH ANNUAL REPORT OF THE CHEMICAL DEPARTMENT OF THE LABORATORY OF HYGIENE

By H. E. BARNARD, B. Sc.

After four years of successful work, the value of the Laboratory of Hygiene as an effective agent for safeguarding the consumer from impure water, adulterated foods and low grade drugs, is well understood. The Health Officers and public generally know what it is doing and are giving it their hearty support and willing assistance. Each year sees the scope of its work extended and larger results attained. It is difficult to bring together in an annual report, in tables and figures, all the results which make the laboratory a valuable agent in the work of the State Board of Health, and the summaries of bare facts it records fall far short of showing what has been accomplished.

The most important advance of the year has been the extension of the work of the water laboratory, made possible under the stream pollution law which was passed at the legislative session of 1909. This law gives the State Board of Health practical control of the water courses of the State and prohibits the pollution of water supplies by domestic sewage or manufacturing waste. It is made the duty of the Board to investigate all complaints which allege the discharge of sewage or other wastes and deleterious matter of every character into a stream, water course, river, spring, lake or pond, to the injury of the character of the water or of public health or comfort. The operation of water purification works and sewage disposal plants is, in the same way, regulated by the State Board of Health. Since all complaints are referred to the water laboratory and all water and sewage investigations made by it, its field for usefulness is much larger than when it was maintained solely for the purpose of furnishing analytical data concerning the character of private water supplies. During the six months following the passage of the law, a number of important investigations of stream pollution and improper sewage disposal problems have been made which are elsewhere reported. The laboratory has continued to be of assistance to the puzzled health officer who finds himself unable to explain the cause of the typhoid outbreaks which continually

occur in the city and country districts and who finds the most probable source of disease in polluted well water. The importance of determining the character of private well supplies within the city limits is becoming more appreciated, not only by the health officers, but by the householder. The uniformly bad character of surface wells which are located on inhabited areas leads to the conclusion that they should be abandoned as a source of water for drinking and domestic purposes and that wherever possible, connection with the public service should be made. The health officer can not determine the character of the water of every well in his jurisdiction unless he is provided with a corps of trained assistants, and too often he has no knowledge of the foul condition of the water supply until a case of typhoid fever in the family usually calls his attention to the shallow well in the back yard, surrounded by privy vaults and vegetable debris. But, in spite of the well recognized bad reputation of the shallow well, it will for years to come be impossible to abandon this supply altogether, even within the city limits. Each year will, however, reduce the number of wells until the state and municipal laboratories are able to place the stamp of approval or seal of condemnation on the remaining supplies.

J. H. Brewster has continued in charge of the water laboratory and has, by his intelligent solution of the problems which have come to him, earned the appreciation of water works officials, engineers and health officers whom he has assisted.

H. E. Bishop and I. L. Miller have continued their work as heads of the food and drug laboratories, although each has had an opportunity to take up his work in other laboratories at a decidedly better salary than that which he is receiving. Their willingness to continue, at a personal sacrifice, to serve the State of Indiana bespeaks for them and their work the cordial support of every citizen.

No change has been made in the corps of inspectors. A. W. Bruner, John Owens, Frank Tucker and B. W. Cohn who were appointed food and drug inspectors shortly after the passage of the pure food law, continue to care for the territory allotted them. Increasing familiarity with their duties and a better acquaintance among the business men with whom they come in contact, has improved the value of their inspection work until they now constitute a machine for the enforcement of food and drug laws which can hardly be improved upon.

While the two years following the passage of the Pure Food and Drug Law had of necessity to be given to the collection of samples

and the explanation of such sections of the law applied to the particular needs of the dairymen, druggists and grocers, their work is now largely devoted to the regulation of sanitary conditions.

It will always be necessary to reinforce the inspection service by laboratory control. The Pure Food Law is now reasonably well understood and yet in spite of the law and in face of the fact that the inspectors are constantly searching for violations and that every citizen of the state has authority to enforce the law, adulteration continues. This will always be the case. Absolute honesty cannot be legislated into existence. The adulteration that occurs as the result of careless methods of manufacture or wilful practices by those who are satisfied to run the risk of detection in their desire to make money at the expense of the consumer can never be entirely checked.

Something more than routine analyses should be required from the public laboratories. Their purpose not only is to provide facilities for law enforcement but also to undertake original work which will be of lasting benefit to the public. We have endeavored to fulfill this purpose by undertaking several investigations which seem in need of solution. In the enforcement of that portion of the Food Law which regulates the use of preservatives it appeared that the trade which employed certain preparations for use at the soda fountain held the belief that it was impossible successfully to conduct a business without resorting to the use of antiseptics. In order to determine in a practical way the truth or fallacy of this belief an elaborate experiment was outlined and carried on during the summer of 1909, which proved conclusively that crushed fruits, fruit syrups and soda fountain supplies, heretofore believed to be perishable, could under proper conditions of preparation and handling be used without deterioration or loss. The results of this investigation are elsewhere recorded.

A careful study has also been made of the so-called temperance beverages and summer drinks which are largely consumed during the warm weather. These results are also given in detail under the respective subject.

Two years ago the shelves of the grocer were loaded with misbranded and adulterated goods. The same class of old stock bearing deceptive labels cumbered the druggists shelves. At the present time such conditions are but rarely found. Wholesalers and retailers in food and drugs have eliminated from their stocks all misbranded and illegal products. This has usually been done by the

merchant because of his desire to comply with the law. In a few instances goods have been condemned and destroyed at the order of the inspector but for the most part the improvement has been brought about by the co-operation of the wholesaler, retailer and inspector. The rigid enforcement of the Federal Law has almost stopped the interstate trade in illegal goods. Unfortunately the Pure Food Law of Indiana varies somewhat from the Federal Law. The most important difference is in that section of the law which controls the use of preservatives, or rather in the rulings made by the departments charged with the enforcement of the law. Under the Federal Law the restricted use of benzoate of soda is allowed. Under the state law it cannot be used in any quantity. Because of this conflict of rulings certain manufacturers have felt that they should be allowed to ship goods into Indiana which were legal under the Federal Law even if they did not meet the requirements of the law of the state. It has therefore been difficult to prevent the interstate shipment of such goods as catsup and pickles preserved with benzoate of soda. The department has been so diligent and successful in its attempts to enforce the law that several manufacturers living in other states have endeavored by injunction proceedings to restrain the State Board of Health and the Food Commissioner from enforcing that portion of the law regulating the use of preservatives. Suits to this end have been filed against the individual members of the State Board of Health and the State Food Commissioner in both the Federal and State Courts. In each case, however, the judge sitting at the hearing refused to grant the temporary injunction prayed for. The cases are still pending their final disposal but until the arguments advanced by these which desire to use preservatives are sustained by the courts the Food Law as it is written will continue to be enforced.

Ever since the Pure Food Law went into effect, cases brought in the courts have been endangered and occasionally lost on the ground taken by the attorneys for the defense that the proprietor is not responsible for the acts of his clerks. The department has always contended that the law should not be so construed, and a decision of the Supreme Court handed down October 14th settles the argument conclusively.

A judgment convicting Nathan C. Groff of selling oleomargarine for dairy butter at the market in Indianapolis in violation of the Pure Food Law was affirmed, although the sale was made by his clerk when he was not there. Judge Hadley said, "The question for decision is, can a principal be held criminally liable for the sale

by a clerk or agent of adulterated food, the sale being made in the absence of the principal and in violation of his instructions? The general rule is that criminal statutes must be strictly construed to avoid the creation of penalties by construction, but such reasonable view must be taken of the statute as will effectuate the manifest intent and purpose of the lawmakers. It is too obvious for discussion that the pure food statute was enacted as a means of protecting the people against the fraud and imposition of manufacturers and vendors of inferior and unwholesome food and medicinal products. In the first place the offense created by the statute belongs to that class in which knowledge or guilty interest is immaterial, and need not be shown in order to justify a conviction. It falls under the rule that where statutes declare that the doing of a certain thing shall constitute an offense against the public, without reference to whether done without notice or with guilty knowledge, it is the act itself, not the intent that determines the guilt, the actual harm to the public being the same in one case as in the other. The distribution of impure or adulterated food for consumption is an act perilous to human health, and hence a dangerous act, and cannot be made innocent and harmless by the want of knowledge or good faith of the sellers. Guilty intent is not an ingredient in a crime, as we have seen; hence the rule that governs in that class of offenses which rest upon criminal intent, has no application here. Cases like this are founded largely upon the principle that he who voluntarily deals in perilous articles must be cautioned how he deals. The sale of oleomargarine in an adulterated form or as substitute for butter is a crime against public health. Whoever, therefore, engages in its sale, or in the sale of any article interdicted by law, does so at his peril, and impliedly undertakes to conduct it with whatever degree of care is necessary to secure compliance with the law. He may conduct the business himself or by clerks or agents, but if he chooses the latter the duty is imposed upon him to see to it that those he selects to sell the article to the public obey the law in the matter of selling; otherwise he, as a responsible proprietor of the business, is liable for the penalty imposed by the statute. We do not believe it was the legislative intent that such proprietor should escape by showing that an unlawful sale made by his clerk was unauthorized. Appellant is the proprietor of a stall in the Indianapolis Market House; among many other food products he keeps for sale oleomargarine and creamery butter but not dairy butter. April, 1907, one Bruner an inspector in the employ of the State Board of Health, presented himself at the appellant's stall and

applied for the purchase of one pound of dairy butter. Appellant was not present. The stall was in sole charge of a young lady, a clerk and employe of appellant, who answered Bruner's application by moving a short distance and then by stooping took from under the counter a package which she wrapped and handed to Bruner and for which she charged and received twenty-five cents. The package was wrapped in a paper that had stamped upon it in large letters the word "Oleomargarine," but which word was not observed by Mr. Bruner until the day of the trial of this case. Appellant had previously given instructions to the young lady to sell everything in the stall for just what it was, and to sell nothing as a substitute for something else. These facts show that the sale was made by a clerk who was employed by appellant to sell oleomargarine along with butter and other things. The sale was made in the regular course of business, in the exercise of the usual duties of her employment; made for appellant upon his apparent authority and for his benefit, and it seems clear that he should be answerable if he had failed to apply the necessary precaution in the selection, counseling and oversight of his agent: or, in other words, held responsible for what he had done by another.

While the adjudications are not in harmony as indicated by the above text, we think the better reason and weight of authority is to the effect that when the element of guilty knowledge and intent are eliminated from an offense and a doing of the act *by any person* is interdicted, the principal should be held to answer for the delinquency of his agent while the latter is engaged in performing the usual duties of the agency.

When we take into consideration community of interest of the proprietor and clerk, the case like this, and the private instructions to a clerk may be given in such a way that there may be more meaning in the manner than in the words spoken, and adding thereto the fact that the modern method of ordering supplies by wire renders the identification of the seller generally impossible, we are led to the conclusion that to sustain appellant's contention (that only the clerk is liable) would operate as a virtual overthrow of the statute."

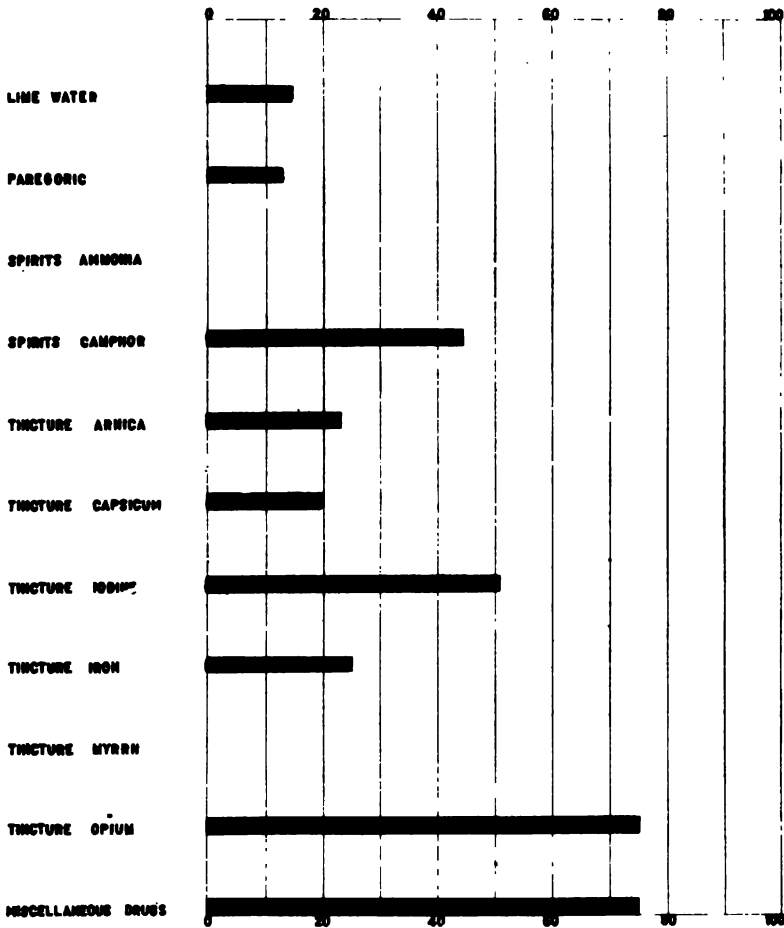
During the year 2,111 samples of food and drugs collected by the inspectors or sent in by health officers have been analyzed. Of this number 1,392 samples have been pure and 719 samples have not conformed to the legal standard of strength, have contained injurious ingredients or have borne misleading labels. This is equivalent to an adulteration of 34 per cent. The percentage of adultera-

tion during 1906 was 42.3 per cent.; for 1907, 20.2 per cent.; for 1908 it was 25.7 per cent. Upon this basis of comparison continued improvement in the character of the food supply is noted. It should be understood however, that since the inspectors in the collection of samples took up only such articles as were liable to be misbranded the percentage of adulteration must not be assumed to be as great as the figures above given would indicate.

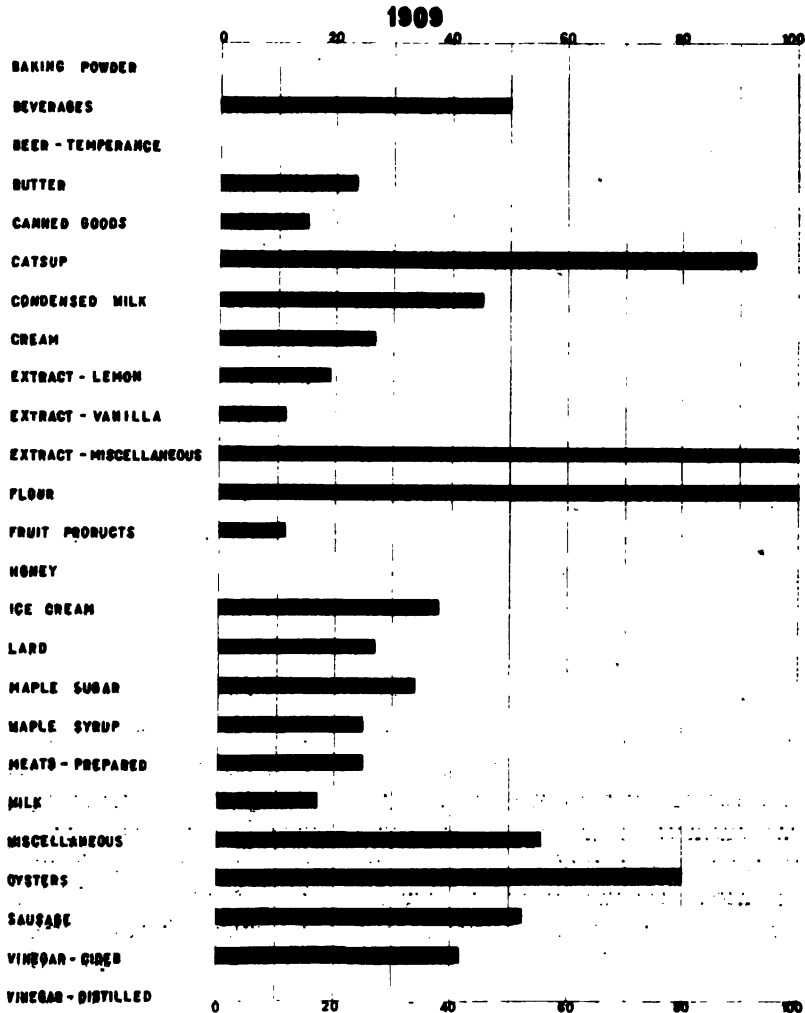
The following summary gives in detail the character and variety of the work done and the results:

PERCENTAGE OF ADULTERATION OF DRUGS IN INDIANA

1909



PERCENTAGE OF ADULTERATION OF FOODS IN INDIANA



FOODS.

MILK.

No phase of pure food control work must be studied more carefully and watched more diligently than the regulation of the milk supply. Dairy practice seems as yet to have advanced little beyond the methods in vogue before pure food laws were thought of, or the sanitation of the food supply considered necessary. The average dairyman, no doubt, appreciates the necessity for cleanliness in his kitchen and at his table, but fails utterly to put into practice at the dairy barn and milk room any of the essentials of cleanliness which his wife insists upon in the home. The attempt to arouse among dairymen the interest in their work which is shown by every other class of men in producing and handling the food supply, usually results in failure. Nearly every city and community counts among its citizens some man, a farmer or business man, who not only appreciates the necessity for a clean milk supply, but as well sees the possibilities in the operation of a model dairy. Unfortunately the model dairies are far too few to furnish sufficient milk for the needs of the public, and for some years to come this important article of food will be produced and dispensed with reckless disregard for the principles of sanitary science. The seriousness of the problem is recognized by the intelligent milk producer. He does not feel that the harsh criticism of health officials is directed toward him. He realizes that nothing is to be gained by mincing words or attempting to excuse culpable ignorance. If the milk industry of this and of every other state is to be placed upon the same level as the business of the baker, the confectioner, the butcher and all tradesmen, who produce and distribute food, the whole truth must be known, not only by the dairymen but by the consumer. Just as long as the housewife accepts from her milkman a bottle of milk which shows a black sediment of manure in the bottom, that milkman will continue to supply dirty milk. Just as soon as city milk inspectors refuse to grant licenses to dairymen who have unfit buildings, improper equipment, no ice supply and who will not subject his cattle to the tuberculin test: just as soon as the consumer makes it a point to inform himself of the dairy which supplies him, and most important of all, just as soon as he shows a willingness to pay the dairyman what it costs to produce clean milk, plus a reason-

able margin of profit—then and not before the milk supply will be clean and wholesome, free from the dirt of the stables, the germs of tuberculosis and the millions of bacteria which develop in a few hours in uncooled and unclean milk.

During the year 482 samples of milk have been analyzed, of which 399 were legal and 83 were illegal. These analyses represent samples of milk produced in dairies in every part of the state and shipped to the laboratory by the State Food Inspectors and by the inspectors of those cities and towns which have an organized corps of health officers but which, as yet, maintain no municipal laboratory. While the use of preservatives is far less extensive than formerly, unfortunately some dairymen still disregard the health of the infants along the line of their milk route and poison their food by formaldehyde and borax. The sale of formaldehyde for use in food products and the teaching of its use is prohibited by law. And yet, the Lyons Department Store, at Hammond, kept for sale to those who wished it, a solution of formaldehyde which was called "MILK KEEP," and which they recommended to their customers as a reliable agent to keep milk from souring. The pure food law fixes certain standards for milk. The sanitary food law exacts certain conditions of cleanliness. If the milk samples collected have violated either law, they are classed as adulterated and prosecutions brought against the responsible parties.

MILKS—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Per Cent. Fat.	Remarks.
.....	Wm. Mayer	Indianapolis	2.9	Skimmed.
11525	Brookmeyer & Son	Goshen	2.9	Skimmed.
12776	Wm. E. Parsons	Kokomo	4.4	Sand and dust present.
12777	Loren P. Moore	Kokomo	4.8	Very dirty.
12779	Cyrus Carter	Kokomo	4.6	Very dirty.
12780	James A. Newton	Kokomo	4.4	Sand present.
12870	Norris	Marion	3.8	Very much dirt.
13399	Geo. Steiner	Jeffersonville	3.2	20% added water.
13390	J. C. Stemler	Jeffersonville	2.8	25% added water.
13617	Mrs. Dodge	Indianapolis	2.0	Cream poured off.
13685	Hammond Dairy Co.	Hammond	3.2	Below standard
13699	Mike Spoerner	Hammond	4.3	Very dirty.
13690	Mike Spoerner	Hammond	3.4	Very dirty.
13694	Geo. Andrus	Hammond	3.5	Very dirty
13695	L. Elster	Hammond	3.4	Very dirty
13698	E. Fruehling	Hammond	3.1	Below standard.
12709	A. Schneider	Gary	3.2	Below standard.
13711	Theo. Heiney	Tolleston	3.0	Adulterated; about 10% added water.
12730	A. Slack	Muncie	3.4	Dirty sediment.
12734	C. M. Austin	Muncie	4.8	Dirty brown sediment.
12735	Dennis	Muncie	4.2	Dirty brown sediment.
12726	Blue Grass Dairy	Muncie	4.1	Dirty brown sediment.
12727	G. L. Sheets	Muncie	4.4	Dirty brown sediment.
12728	Thomas Boyd	Muncie	4.0	Dirty brown sediment.

MILKS—ILLEGAL—Continued.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Per Cent. Fat.	Remarks.
13739	Campbell Ice Cream Co	Muncie	3.8	Small amount brown sediment.
13740	Frank Jackson	Peru	4.2	Much dirt and manure.
14557	Rand Bros.	Indianapolis	3.4	Dirty.
14591	Desus Kerhoert	Mishawaka	3.4	5% added water.
14599	John Huener	Mishawaka	3.3	Very dirty.
14597	Ira Hose	Mishawaka	3.4	Dirty.
14591	Harry McGrain	Corydon	2.7	Skimmed.
14594	E. E. McFerran	Bloomington	2.6	Skimmed.
14597	A. C. Coyle	Bloomington	2.2	Skimmed.
14599	Henry & Kerr	Bloomington	1.8	Skimmed.
14595	M. D. Wells	Bloomington	0.7	Skimmed.
14764	John S. Payne	New Albany	2.0	8% added water.
14764	Jno. E. Worrell	Jeffersonville	3.0	10% added water.
14756	Herman Becker	Jeffersonville	3.1	Skimmed.
14790	Chris. Meyer	Jeffersonville	3.8	Dirty.
14792	John Stenler	Jeffersonville	3.0	Skimmed.
14793	Wm. H. Dames	Jeffersonville	3.8	Dirty.
14816	F. L. Kreutz	Mishawaka	2.6	Skimmed.
14826	Fred W. Trowman	South Bend	2.6	Skimmed.
14830	W. E. Rentschler	South Bend	2.4	Skimmed.
15054	Louis Carthaus	Indianapolis	3.0	Below standard.
15064	John H. Hile	Logansport	3.0	Below standard.
15067	Harry Niodemus	Logansport	3.0	Below standard.
15068	W. R. Cogley	Logansport	3.1	Below standard.
15125	Hedrick & Mackenbach	Indianapolis	3.0	Watered 10%.
15126	Ambrose Andrews	Indianapolis	3.0	Skimmed.
15129	George Smith	Indianapolis	3.2	Watered.
15130	Henry Arnholters	Indianapolis	2.9	Skimmed.
15131	Bert. N. Hay	Indianapolis	3.0	Skimmed.
15132	Hammond & Pasquie	Indianapolis	2.4	Skimmed.
15133	J. C. Madden	Mishawaka	3.1	Skimmed.
15164	Nora Sutton	French Lick	3.0	Skimmed.
15155	Willard Campbell	French Lick	3.1	Skimmed.
15200	F. H. Turner	Paoli	2.6	Below standard.
15203	Willard Campbell	French Lick	3.1	Skimmed.
15212	Frank J. Roel	Batesville	3.0	15% water.
15228	Sanitary Milk Co.	Peru	2.6	Skimmed.
15318	Laughlin & Coffey	Bloomfield	2.4	Skimmed.
15335	Chas. Prauge	Ft. Wayne	2.6	Skimmed.
15336	C. Stimmel	Ft. Wayne	3.0	Skimmed.
15338	Pointsett & Trick	Ft. Wayne	3.0	Below standard.
15461	P. E. Jones	Peru	3.1	Skimmed.
15453	Max Breult	Peru	3.1	Skimmed.
15539	C. M. Austin	Muncie	3.8	Dirty.
15543	S. Draton	Muncie	4.5	Very dirty.
15544	A. D. King	Muncie	5.2	Very dirty.
15553	A. C. Ayers (cont in)	Brownburg	2.8	Below standard.
15589	Paul Deardroff	Kokomo	4.9	Very dirty.
15639	Steve Seuebach	Whiting	3.0	Very dirty.
15642	C. Stewart	Whiting	3.1	14% added water.
16073	Sanitary Milk Co.	Peru	2.5	20% added water.

MILK PRODUCTS.

CONDENSED MILK.

Of the 29 samples of condensed milk analyzed, 16 were legal and 13 were illegal, being low in butter fat and solid content. The character of condensed milk has not improved during the last year. If the manufacturers and jobbers are to be believed, the public taste has so changed that it demands a milk fluid and free from any fat separation, even to such a point that because of its low solid and fat content, it is decidedly inferior in food value to the product formerly manufactured.

CONDENSED MILK—LEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Fat, Per Cent.	Solids, Per Cent.	Ash, Per Cent.	Fat-Solids, Ratio.	Remarks.
12901	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	7.60	25.62	1.23	29.66	Passed.
12992	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	7.60	25.56	1.38	29.73	Passed.
12993	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	7.20	24.65	1.15	29.21	Passed.
12995	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	7.70	25.10	1.05	30.67	Passed.
13700	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	7.80	26.07	1.07	29.9	Passed.
13701	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	7.80	26.11	1.13	29.8	Passed.
13702	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	7.80	26.15	1.10	29.8	Passed.
13704	Sent in from	Indianapolis..	8.10	29.70	2.28	27.2	Passed.
13705	Sent in from	Indianapolis..	7.95	28.19	2.19	28.2	Passed.
13706	Sent in from	Indianapolis..	8.10	29.73	2.38	27.2	Passed.
14010	L. Hollenar, Madison.	Indianapolis..	9.8	.....	.....	.....	Legal.
14987	Sum Bros.	Indianapolis..	8.0	.....	.....	.....	Passed.
15021	Philadelphia—So. Bend.	Indianapolis..	9.2	.....	.....	.....	Legal.
15116	J. D. Sears, St. Margaret's Hospital	Hammond.....	10.4	.....	.....	.....	Legal.
15560	St. Margaret's Hospital	Hammond.....	10.6	.....	.....	.....	Legal.
15567	St. Margaret's Hospital	Hammond.....	8.8	.....	.....	.....	Legal.

CONDENSED MILK—ILLEGAL.

12986	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	5.70	22.82	1.23	24.98	Below standard.
12987	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	6.00	23.90	1.16	25.10	Below standard.
12988	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	6.60	24.45	1.21	27.00	Below standard.
12989	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	6.50	24.18	1.04	26.86	Below standard.
12990	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	6.60	25.13	1.09	26.22	Below standard.
12994	Indiana Condensed Milk Co., Sheridan, Ind.	Indianapolis..	5.80	21.73	1.05	26.70	Below standard.
14769	J. W. Lipton, New Albany, Ind.	Indianapolis..	10.0	.....	.....	.....	Dirty.
15806	Elliott Gro. Co., Logansport.	Logansport..	6.4	.....	.....	.....	Below standard.
15807	Elliott Gro. Co., Logansport.	Logansport..	6.4	.....	.....	.....	Below standard.
15808	Elliott Gro. Co., Logansport.	Logansport..	6.5	.....	.....	.....	Below standard.

CREAM.

Fifty-eight samples of cream were analyzed during the year, of which 43 were legal and 15 were illegal. The adulteration was usually due to the presence of less than 18 per cent. of butter fat, the amount required by the standard. No viscogen, gelatin, starch or other thickeners are in use, so far as has been determined by the analyses.

CREAM—LEGAL.

Lab. No.	Manufacturer or Dealer.	Where Collected.	Per Cent. Fat.
12971	Sent in from	Marion	30.0
13110	Folk & Co.	Indianapolis	21.6
13138	Farmer's Protective Association	Indianapolis	23.8
13262	Sent in from	Indianapolis	36.0
13387	Sent in from	Lafayette	30.0
13388	Sent in from	Alexandria	30.0
13399	Sent in from	Alexandria	30.0
13400	Sent in from	Alexandria	30.0
13501	Sent in from	Lafayette	29.5
13548	John Blickenstaff	N. Manchester	24.0
13652	C. M. Stanley	Albion	28.0
13654	Will Voris, Jr.	Albion	18.0
13686	Hammond Dairy Co.	Hammond	24.0
13691	Mike Spoerner	Hammond	21.0
13699	E. Fruehling	Hammond	18.0
13710	A. Schneider	Gary	23.0
13712	Thos. Hainey	Tolleston	19.0
13714	E. F. Bender	Gary	18.0
13755	Sanitary Milk Co.	Peru	19.0
13763	Ray & Arnold	Logansport	22.0
13904	E. H. Hallett	Princeton	18.2
13910	Vincennes Co.	Vincennes	19.0
14015	F. Schalter	Madison	24.4
14098	F. H. Cornelius	Rochester	30.0
14692	R. L. Winslow	Bloomington	
15067	Wm. F. Korbier	Indianapolis	19.0
15086	Ray & Arnold	Logansport	
15115	J. D. Sears	Bedford	32.0
15140	J. R. Rundell	Mishawaka	26.0
15150	J. C. Madden	Mishawaka	25.0
15280	E. Whitlow	Lebanon	24.0
15353	E. H. Davidson	Lebanon	20.0
15354	E. H. Davidson	Lebanon	21.0
15369	E. Murphy	Connorsville	18.0
15426	Vincennes Milk Co.	Vincennes	21.6
15456	Sanitary Milk Co.	Peru	18.8
15536	Joe McAllister	Muncie	18.4
15568	Hammond Dairy Co.	Hammond	22.0
15587	Sanitary Milk Co.	Kokomo	18.4
15712	D. G. McMahon	Ft. Wayne	22.2
15749	Geo. McElwee	Peru	35.0
15795	Willis Floyd	Zionsville	36.0
15841	Sanitary Milk Co.	Peru	

CREAM—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Per Cent Fat.	Remarks.
13688	Jersey Dairy Co.	Hammond	14.0	Below standard.
13693	T. Cushman	Hammond	14.0	Below standard.
13715	C. W. Frott	Gary	14.0	Below standard.
13733	L. D. Fines	Muncie	22.0	Dirty.
14016	Fred Glas	Madison	14.2	Below standard.
14771	John A. Weaver	New Albany	18.8	Dirty.
15119	J. L. Miller	Bedford	14.0	Below standard.
15365	Minor Conner	Connorsville	15.0	Below standard.
15368	George Cain	Connorsville	14.0	Below standard.
15534	Pettk & Berryhill	Lebanon	14.1	Below standard.
15637	James McNamara	Whiting	12.0	Below standard.
15643	C. Stewart	Whiting	15.6	Below standard.
15744	H. O. Goodlander	Wabash	17.4	Below standard.
16072	Sanitary Milk Co.	Peru	14.0	Below standard.

BUTTER.

One hundred and two samples of butter were analyzed during the year, of which 78 were legal and 24 were illegal, either because of the presence of an excessive amount of water or the mixture or substitution of oleomargarine. The moisture content of legal butter must not exceed 16 per cent. Under the Internal Revenue laws, butter containing more than 16 per cent. of moisture is classed as adulterated butter and can only be manufactured when the purchaser holds a government license and pays a tax upon his product. The small butter maker who keeps four or five cows, who has no ice and who frequently does not know how to produce good butter, very commonly during hot weather produces a butter which is illegal because it contains too much water. This adulteration is no doubt, unintentional, but it is none the less illegal. The consumer pays for water instead of butter and the presence of this low grade article on the market is an unfair competitor of standard butters.

BUTTER—LEGAL.

Lab. No.	Retailer.	Collected.	Butyro, @40°C.	Reichert-Meisel Number.	Moisture.
12963	Sent in from.	Fairmount.	42.4	26.05	
13010	Larabee & Wiggins.	Indianapolis.	43.4	27.15	
13012	Stegemeier Bros.	Indianapolis.	42.3	31.00	
13013	Konstohr & Carpenter.	Indianapolis.	43.5	26.62	
13018	Wm. Smith.	Indianapolis.	42.3	31.53	
13023	June's Restaurant.	Indianapolis.	41.4	28.82	
13042	Ray R. Foster.	Indianapolis.	42.5	30.88	
13079	Frank M. Hananaur.	South Bend.	40.4	27.69	
13083	So. Bend Tea Store.	South Bend.	41.7	28.12	
13109	Lafe D. Weathers.	Indianapolis.	42.5	27.96	
13115	E. Friedman.	Indianapolis.	41.6	34.28	
13140	W. V. Leach.	Indianapolis.	40.9	27.79	
13260	Sent in from.	Peru.	40.8	25.94	
13306	Geo. M. White.	Lagrange.	41.3	30.04	
13310	Wm. Driver.	Lagrange.	42.4	25.12	
13312	Geo. B. Moore.	Lagrange.	40.0	29.13	
13315	Timmis Bros.	Lagrange.	39.5	30.06	
13381	Sent in from.	Michigan City.	40.3	25.11	
13523	A. Sagemelr.	Indianapolis.	42.7	28.70	11.16
13524	Mrs. H. Freiberg.	Indianapolis.	42.2	28.70	12.29
13557	Sent in from.	Indianapolis.	43.7		
13563	Sent in from.	South Bend.	43.0	26.75	
13571	C. E. Grosham.	Knox.	42.2	23.74	13.37
13577	Blasop Grocery Co.	Buchanan, Mich.	42.0	28.14	12.50
13578	W. J. Withelm.	Knox.	41.5	25.40	12.00
13659	W. H. Hart.	Albion.	41.8	26.56	11.16
13670	Guy Hardenbrook.	Albion.	42.2	29.78	9.60
13703	Geo. P. Betts.	Millford.	41.1	27.98	
13812	Treffenger Gro. Co.	Ft. Wayne.	42.7	29.41	9.83
13813	Brinkroegers.	Ft. Wayne.	41.5	28.54	13.32
13814	Oowderdale & Archer.	Ft. Wayne.	42.2	28.20	14.51
13815	James H. Eaken.	Ft. Wayne.	42.5	28.50	13.68
13816	Gets, Sharp & Orr.	Ft. Wayne.	42.3	28.21	12.56
13817	Mensch.	Ft. Wayne.	41.1	33.21	9.12
13818	Joseph Oddon.	Ft. Wayne.	41.7	26.37	13.48
13819	234 E. Columbia St.	Ft. Wayne.	43.5	29.25	15.25
13820	J. J. Reed.	Ft. Wayne.	42.2	30.03	15.56
13821	Current Grocery.	Ft. Wayne.	41.4	25.03	12.98
13822	Wm. Doehrmann.	Ft. Wayne.	42.3	23.98	11.16
13823	Lehnest Gebler.	Ft. Wayne.	42.6	29.91	8.91
13824	Hegerfeldt.	Ft. Wayne.	43.3	24.45	9.42
13825	G. E. Spiegle.	Ft. Wayne.	41.1	30.95	9.48
13826	August Korn.	Ft. Wayne.	42.9	22.22	14.46

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BUTTER—LEGAL—Continued.

Lab. No.	Retailer.	Collected.	Butyro @40°C.	Reichert-Meissl Number.	Moisture.
13827	John Schmidt.	Ft. Wayne.	43.1	28.80	12.66
13828	C. H. Buck.	Ft. Wayne.	42.8	29.28	13.12
13829	G. Hitemann.	Ft. Wayne.	42.4	27.90	10.89
13963	E. S. Nance.	Brasil.	41.0	28.90	
14031	Shore & Wilson.	Rochester.	42.2	25.61	9.44
14032	L. P. Connor.	Rochester.	42.0	28.50	11.52
14039	J. T. Liston.	Rochester.	43.1	28.50	12.93
14525	Dr. F. M. Payne.	Princeton.	42.0	28.83	
14616	H. O. Bruggeman.	Ft. Wayne.	42.3	24.48	
14832	Groff Bros.	Mishawaka.	43.4	32.60	
14833	Groff Bros.	Mishawaka.	40.8	23.07	
14839	Cotton & Thalbemar.	Mishawaka.	43.3	25.98	
14840	Cotton & Thalbemar.	Mishawaka.	43.2	24.93	
15023	Perkins.	Cannel.	43.0	25.07	
15113	John T. Willett.	South Bend.	44.4	23.75	
15181	Fred Necoman.	Indianapolis.	42.8		
15352	Bartlett Tea Co.	Indianapolis.	43.2	26.90	
15394	John T. Willett.	South Bend.	42.3		
15658	Internal Revenue Bureau.	Indianapolis.	44.5		
15659	Internal Revenue Bureau.	Indianapolis.	42.7		
15660	Internal Revenue Bureau.	Indianapolis.	44.3		
15661	Internal Revenue Bureau.	Indianapolis.	44.5		
15796	F. H. Elliott.	Carmel.			13.78
15798	Mrs. John M. Feltz.	Ben Davis.			14.70
15799	Mrs. John M. Feltz.	Ben Davis.			11.40
15800	Cesar Huffman.	Ben Davis.			15.00
15801	Lady Scott.	Whitestown.			12.08
15802	S. W. McManis.	Whitestown.			15.68
15803	Mary E. Ross.	Plainfield.			14.40
15809	E. Newby.	Westfield.			14.10
15811	Charles Hume.	Indianapolis.			9.40
15857	J. C. Shelburn.	Zionsville.			13.20
16043	W. H. King.	Lebanon.			14.80
16051	L. O. Shank.	West Newton.			9.81
16106	S. A. Plummer.	West Newton.			9.69

BUTTER—ILLEGAL.

Lab. No.	Retailer.	Collected.	Butyro @40°C.	Reichert-Meissl Number.	Moisture	Remarks.
13002	Sent in from.	Somerset.	39.4	17.49		Not pure butter
13114	J. R. Kimberlin.	Indianapolis.	42.3	26.11		Renovated butter.
13119	Sent in from.	Hammond.	47.0	3.52		Oleomargarine.
13120	Sent in from.	Indianapolis.	41.0	26.70		Moisture 19.65%; excess moisture.
13121	Sent in from.	Indianapolis.	42.0	29.34		Moisture 20.31%; excess moisture.
13122	Sent in from.	Indianapolis.	42.0	31.85		Moisture 17.04%; excess moisture.
13412	Sent in from.	Muncie.	39.9	23.28		Probably renovated.
13555	Sent in from.	Indianapolis.	48.4			Oleomargarine.
13556	Sent in from.	Indianapolis.	49.15			Oleomargarine.
13675	Delicatessen Co.	Elkhart.	49.9	4.22		Oleo.
13708	Dr. C. C. McIntosh.	Terre Haute.	44.3			Mixed.
14815	Mr. White.	Attorney Gen.'s Office.	49.0			Oleo.
15662	Henry Levy.	State House.	43.0		26.0	Adulterated.
16044	S. A. Plummer.	West Newton.			17.93	Adulterated.
14911	Internal Revenue Bureau.	Indianapolis.	50.3			Oleo.
14912	Internal Revenue Bureau.	Indianapolis.	50.3			Oleo.
14913	Internal Revenue Bureau.	Indianapolis.	49.0			Oleo.
14914	Internal Revenue Bureau.	Indianapolis.	49.0			Oleo.
14915	Internal Revenue Bureau.	Indianapolis.	48.5			Oleo.
14916	Internal Revenue Bureau.	Indianapolis.	48.3			Oleo.
14917	Internal Revenue Bureau.	Indianapolis.	50.2			Oleo.
14918	Internal Revenue Bureau.	Indianapolis.	48.3			Oleo.
14919	Internal Revenue Bureau.	Indianapolis.	50.0			Oleo.
15030	Internal Revenue Bureau.	Indianapolis.	48.5			Oleo.

ICE CREAM.

Of the 183 samples of ice cream analyzed during the year, 114 were legal and 69 were classed as illegal. The adulteration commonly noted consisted of an insufficient amount of butter fat. The standard for ice cream requires 8 per cent. of butter fat to be present. Many manufacturers, apparently are not satisfied to conform to this standard, and substitute in their formulas condensed, skimmed, or whole milks in such quantities that the finished product contain from two to four per cent. less butter fat than should be present.

ICE CREAM—LEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Per Cent. Fat.
13206	P. Scatena & Company	Hammond	8.0
13207	Brabos Brothers	Hammond	11.0
13217	Bogers, Tolleston	Gary	13.0
13218	L. C. Sages	Gary	16.8
13219	Tom Magramo	Gary	11.6
13224	E. H. Hallett	Princeton	13.6
13229	Hassel & Son	Princeton	8.0
14014	Frank Schnatter	Madison	18.4
14034	H. H. Rosenberger	Corydon	15.2
14035	Geo. Feller	Corydon	13.6
14040	Furnas Ice Cream Co.	Indianapolis	9.6
14711	Coppes Pharmacy	Nappanee	8.8
14726	Steele & Shaw	New Albany	8.0
14728	George Goodbub	New Albany	13.2
14778	John Haffen	New Albany	10.4
14827	Klein Candy Co.	Mishawaka	10.8
14832	C. H. Jones	Washington	11.2
14833	Sum Bros.	Washington	9.2
14839	W. B. Hollingsworth	South Bend	12.0
14840	F. F. Tewsbury	South Bend	8.2
14841	E. Polkar	South Bend	8.0
14843	John B. Noble	South Bend	11.4
14845	New York Candy Kitchen	South Bend	11.4
14844	Nardi & Co.	South Bend	12.0
15019	Philadelphia	South Bend	14.0
15030	Philadelphia	South Bend	13.6
15117	J. D. Sears	Bedford	10.6
15124	Jno. J. Mitchell	Bedford	10.8
15125	Owl Drug Store	Bedford	8.0
15126	F. H. Turner	Paoli	8.0
15127	Lindley Bros.	French Lick	8.0
15128	Hillside Dairy	French Lick	11.6
15131	W. W. Sloan	French Lick	10.0
15132	John W. Whittier (sent in)	South Bend	8.8
15133	E. W. Burns (sent in)	South Bend	9.2
15134	Ward & Co. (sent in)	South Bend	15.2
15135	New York Candy Co. (sent in)	South Bend	12.0
15170	John Woble (sent in)	South Bend	12.0
15171	Dreyer Candy Shop (sent in)	South Bend	15.2
15172	Mrs. L. Brooks (sent in)	South Bend	9.2
15173	Mrs. J. L. Turner (sent in)	South Bend	8.0
15197	Harry Ritter	West Baden	8.0
15217	Ed. Blank	Batesville	12.2
15247	Cushman Bros.	Frankfort	10.0
15248	Richard Green	Lebanon	8.0
15249	P. B. Powell	Lebanon	8.0
15250	Furnas Ice Cream Co.	Indianapolis	8.0
15251	Whitborough & Ackerman	Lebanon	9.2
15252	L. E. Jones	Lebanon	10.0
15253	Peas & Perryhill	Lebanon	12.4

BUTTER—LEGAL—Continued.

Lab. No.	Retailer.	Collected.	Butyro. @40°C.	Reichert-Meissl Number.	Moisture.
13827	John Schmidt.	Ft. Wayne.	43.1	28.80	12.66
13828	C. H. Buck.	Ft. Wayne.	42.8	29.28	12.12
13829	G. Hitzemann.	Ft. Wayne.	42.4	27.90	10.80
13963	E. S. Nance.	Brasil.	41.0	28.90	
14031	Shore & Wilson.	Rochester.	42.2	25.61	9.44
14032	L. P. Conner.	Rochester.	42.0	28.50	11.52
14039	J. T. Liston.	Rochester.	43.1	28.50	12.93
14525	Dr. F. M. Payne.	Princeton.	42.0	28.83	
14616	H. O. Bruggeman.	Ft. Wayne.	42.3	24.48	
14822	Groff Bros.	Mishawaka.	43.4	32.60	
14833	Groff Bros.	Mishawaka.	40.8	23.07	
14839	Cotton & Thalbenar.	Mishawaka.	43.3	25.98	
14940	Cotton & Thalbenar.	Mishawaka.	43.2	24.93	
15023	Perkins.	Cannel.	43.0	25.07	
15113	John T. Willett.	South Bend.	44.4	23.75	
15181	Fred Necoman.	Indianapolis.	42.8		
15352	Bartlett Tea Co.	Indianapolis.	43.2	26.90	
15394	John T. Willett.	South Bend.	42.3		
15658	Internal Revenue Bureau.	Indianapolis.	44.5		
15659	Internal Revenue Bureau.	Indianapolis.	42.7		
15660	Internal Revenue Bureau.	Indianapolis.	44.3		
15661	Internal Revenue Bureau.	Indianapolis.	44.5		
15796	F. H. Elliott.	Carmel.			12.78
15798	Mrs. John M. Fols.	Ben Davis.			14.70
15799	Mrs. John M. Fols.	Ben Davis.			11.40
15800	Crow Huffman.	Ben Davis.			15.00
15801	Lady Scott.	Whitestown.			12.08
15802	S. W. McTearin.	Whitestown.			15.88
15803	Mary E. Roe.	Plainfield.			14.40
15809	E. Newby.	Westfield.			14.10
15811	Charles Kline.	Indianapolis.			9.40
15857	J. C. Shelburn.	Zionsville.			12.20
16043	W. H. King.	Lebanon.			14.80
16051	L. O. Shank.	West Newton.			9.51
16106	S. A. Plummer.	West Newton.			9.69

BUTTER—ILLEGAL.

Lab. No.	Retailer.	Collected.	Butyro. @40°C.	Reichert-Meissl Number.	Moisture.	Remarks.
13002	Sent in from.	Somerset.	30.4	17.49		Not pure butter
13114	J. R. Kimberlin.	Indianapolis.	42.3	26.11		Renovated butter.
13119	Sent in from.	Hammond.	47.0	3.52		Oleomargarine.
13120	Sent in from.	Indianapolis.	41.0	26.70		Moisture 19.65%; excess moisture.
13121	Sent in from.	Indianapolis.	42.0	29.34		Moisture 20.31%; excess moisture.
13122	Sent in from.	Indianapolis.	42.0	31.85		Moisture 17.04%; excess moisture.
13412	Sent in from.	Muncie.	30.9	23.28		Probably renovated.
13555	Sent in from.	Indianapolis.	48.4			Oleomargarine.
13556	Sent in from.	Indianapolis.	49.15			Oleomargarine.
13675	Delicatessen Co.	Elkhart.	49.9	4.22		Oleo.
13708	Dr. C. C. McIntosh.	Terre Haute.	44.3			Mixed.
14815	Mr. White.	Attorney Gen.'s Office.	49.0			Oleo.
15662	Henry Levy.	State House.	43.0		26.0	Adulterated.
16044	S. A. Plummer.	West Newton.			17.93	Adulterated.
14911	Internal Revenue Bureau.	Indianapolis.	50.3			Oleo.
14912	Internal Revenue Bureau.	Indianapolis.	50.3			Oleo.
14913	Internal Revenue Bureau.	Indianapolis.	49.0			Oleo.
14914	Internal Revenue Bureau.	Indianapolis.	49.0			Oleo.
14915	Internal Revenue Bureau.	Indianapolis.	48.5			Oleo.
14916	Internal Revenue Bureau.	Indianapolis.	48.3			Oleo.
14917	Internal Revenue Bureau.	Indianapolis.	50.2			Oleo.
14918	Internal Revenue Bureau.	Indianapolis.	48.3			Oleo.
14919	Internal Revenue Bureau.	Indianapolis.	50.0			Oleo.
15030	Internal Revenue Bureau.	Indianapolis.	48.5			Oleo.

ICE CREAM.

Of the 183 samples of ice cream analyzed during the year, 114 were legal and 69 were classed as illegal. The adulteration commonly noted consisted of an insufficient amount of butter fat. The standard for ice cream requires 8 per cent. of butter fat to be present. Many manufacturers, apparently are not satisfied to conform to this standard, and substitute in their formulas condensed, skimmed, or whole milks in such quantities that the finished product contain from two to four per cent. less butter fat than should be present.

ICE CREAM—LEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Per Cent. Fat.
13006	P. Scatina & Company	Hammond	8.0
13007	Brabos Brothers	Hammond	11.0
13717	Bogers, Tolleston	Gary	13.0
13718	L. C. Sages	Gary	16.8
13719	Tom Magrango	Gary	11.6
13804	E. H. Hallett	Princeton	13.6
13809	Hassel & Son	Princeton	8.0
14014	Frank Sonaiter	Madison	18.4
14034	H. H. Rosenberger	Corydon	15.2
14036	Geo. Feller	Corydon	13.6
14040	Furnas Ice Cream Co.	Indianapolis	9.6
14711	Coppes Pharmacy	Nappanee	8.8
14766	Steele & Shaw	New Albany	8.0
14773	George Goodbub	New Albany	13.2
14778	John Haffen	New Albany	10.4
14837	Klein Candy Co.	Minawaka	10.8
14833	C. H. Jones	Washington	11.2
14836	Sum Bros.	Washington	9.2
14839	W. B. Hollingsworth	South Bend	12.0
14840	F. F. Tewsbury	South Bend	8.2
14841	E. Polkier	South Bend	8.0
14843	John E. Noble	South Bend	11.4
14845	New York Candy Kitchen	South Bend	11.4
14844	Nardi & Co.	South Bend	12.0
15019	Philadelphia	South Bend	14.0
15080	Philadelphia	South Bend	13.6
15117	J. D. Sears	Bedford	10.6
15114	Jno. J. Mitchell	Bedford	10.8
15125	Owl Drug Store	Bedford	8.0
15126	F. H. Turner	Paoli	8.0
15127	Lindley Bros.	French Lick	8.0
15128	Hillside Dairy	French Lick	11.6
15131	W. W. Sloan	French Lick	10.0
15132	John W. Whittier (sent in)	South Bend	8.8
15137	E. W. Burns (sent in)	South Bend	9.2
15138	Ward & Co. (sent in)	South Bend	15.2
15139	New York Candy Co. (sent in)	South Bend	12.0
15170	John Wobbe (sent in)	South Bend	12.0
15171	Dreyer Candy Shop (sent in)	South Bend	15.2
15173	Mrs. L. Brooks (sent in)	South Bend	9.2
15173	Mrs. J. L. Turner (sent in)	South Bend	8.0
15197	Harry Ritter	West Baden	8.0
15217	Ed. Blank	Batesville	12.2
15247	Cashwa Bros.	Frankfort	10.0
15248	Richard Green	Lebanon	8.0
15249	P. B. Powell	Lebanon	8.0
15250	Furnas Ice Cream Co.	Indianapolis	8.0
15251	Whimborough & Ackerman	Lebanon	9.2
15251	A. B. Jones	Lebanon	10.0
15252	Wm. & Berryhill	Lebanon	12.4

ICE CREAM—LEGAL—Continued.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Per Cent. Fat.
15254	Lebanon Cream Co.	Lebanon	10.8
15306	J. F. Donwer & Son	Elnora	10.8
15308	Jessup & Antrim	Indianapolis	8.6
15311	E. C. Wilkinson	Worthington	8.2
15314	Bros & Osborn	Worthington	9.0
15339	Ft. Wayne Dairy Co.	Ft. Wayne	9.6
15340	Geo. T. Pantasin	Ft. Wayne	8.6
15341	Collins & Co.	Huntington	10.0
15343	A. C. Aurentz	Ft. Wayne	13.2
15346	W. S. Giller	Ft. Wayne	10.0
15386	H. L. Frost	Connersville	9.6
15425	Vincennes Cond. Milk	Vincennes	8.4
15430	Greek Candy Kitchen	Vincennes	12.0
15431	Planke Bros.	Vincennes	13.6
15432	Cassel & Son	Vincennes	10.8
15463	N. Jensey	Clay City	9.6
15486	J. S. Harris	Spencer	8.0
15487	B. C. Larimore	Spencer	9.2
15495	John W. Stairwolt	Worthington	9.0
15496	Davis & Osborn	Terre Haute	9.6
15497	E. C. Wilkins	Worthington	8.8
15531	Benks & Roth	Worthington	8.0
15594	Sanitary Ice Cream Co.	Kokomo	11.0
15645	R. Nutini	Whiting	8.8
15646	Whiting Candy Kitchen	Whiting	8.8
15647	Worchulls (Manufacturer)	Hammond	8.0
15648	R. Nutini	Whiting	10.8
15698	Geo. Chopers	Anderson	8.0
15699	Geo. H. King	Anderson	8.0
15706	M. Zimmerman	Ft. Wayne	8.8
15708	Collins Ice Cream Co.	Ft. Wayne	13.2
15713	W. F. Geller	Ft. Wayne	9.4
15714	C. O. Lepper	Ft. Wayne	8.0
15715	J. C. Aurent	Ft. Wayne	15.0
15737	James Dickman	Peru	15.0
15738	Chas. Bueller	Peru	10.0
15740	R. E. Clark	Wabash	8.0
15741	Bradley Bros.	Wabash	8.0
15746	Gaylord & Barmbauer	Wabash	16.0
15847	Wm. Newman	Wabash	11.4
15948	Wm. F. Verfus	Williamsport	8.3
15949	Pitche Bros.	Williamsport	10.0
15888	Corporen & Jonquette	Mishawaka	11.4
15889	Fairie & Rosie	Mishawaka	13.4
15971	S. H. Wallsee	Veedsburg	8.5
15974	J. F. Sullivan	Veedsburg	10.4
15985	J. F. Kellner	Covington	10.9
15997	J. A. Teevebaugh	Crawfordsville	8.8
15999	J. C. Wampler	Crawfordsville	10.0
16040	Crane Brothers	Frankfort	8.0
16041	Ben Honecker	Darlington	9.6
16042	Mrs. B. F. Thurston	Darlington	14.0
16074	Wm. Newman	Wabash	8.4
16075	Gaylord & Barmbauer	Wabash	16.4
16077	R. E. Clark	Wabash	8.0
16078	Geo. Dernos	Wabash	17.6
16081	Thomas Beil	Ft. Wayne	16.0
16084	Anna Overhuler	Ft. Wayne	9.2
16085	Walker & Murray	Zanesville	8.8
16086	Ft. Wayne Dairy Co.	Ft. Wayne	8.2
16087	C. E. Woodworth	Ft. Wayne	9.6
16088	Ft. Wayne Dairy Co.	Ft. Wayne	17.6
16089	A. C. Aurentz	Ft. Wayne	14.4
16091	W. F. Giller	Ft. Wayne	10.6

ICE CREAM—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Per Cent. Fat.	Remarks.
E1936	W. F. Crook	Worthington		Below standard
E1748	Laughlin & Coffee	Worthington		Below standard
11735	Pearl Ice Cream Co.	Terre Haute	6.0	Below standard.
14688	Geo. Poulisten	Bloomington	4.2	Below standard.
14729	Wm. A. Garrison	Bedford	5.2	Below standard.
14731	J. L. Miller	Bedford	4.4	Below standard.
14743	O. P. Mathew	Mitchell	5.0	Below standard.
14828	Ferretter & Co	Mishawaka	5.0	Below standard.
14829	Corporan & Jonquette	Mishawaka	6.8	Below standard.
14856	Smoot Bros	Washington	6.0	Below standard.
15024	H. H. Warner	Linton	4.8	Below standard.
15088	J. E. Allen	Bedford	6.4	Below standard.
15089	A. Wood	Mitchell	4.4	Below standard.
15039	J. D. Sears	Bedford	6.4	Below standard.
15164	J. L. Miller	Bedford	7.0	Below standard.
15165	W. B. Hollingsworth	South Bend	6.8	Below standard.
15202	Geo. B. Lee	French Lick	4.0	Below standard.
15216	Jacob Engle	Batesville	7.2	Below standard.
15215	Frank Gehring	Batesville	2.8	Below standard.
15305	A. Effinger	Elnora	4.2	Below standard.
15307	W. F. Crook	Worthington	6.0	Below standard.
15310	Buiks & Roth	Worthington	7.4	Below standard.
15319	Laughlin & Coffee	Bloomfield	4.8	Below standard.
15330	H. V. Stropes	Bloomfield	7.6	Below standard.
15342	White Fruit House	Ft. Wayne	6.4	Below standard.
15428	Mary Duestirbey	Knox	6.1	Below standard.
15429	Rumer & Son	Vincennes	6.7	Below standard.
15457	Exmeyer Ice Cream	Peru	4.8	Below standard.
15458	Howard & Son	Peru	4.2	Below standard.
15484	John C. Dudley	Spencer	6.6	Below standard.
15489	J. S. C. Layman	Spencer	6.5	Below standard.
15494	W. F. Crook	Worthington	5.6	Below standard.
15523	Ellis G. Hooper	Bicknell	7.6	Below standard.
15529	Hollingsworth & Howard	Bicknell	6.8	Below standard.
15530	R. N. File	Bicknell	6.0	Below standard.
15545	Nick Harman	Muncie	7.2	Below standard.
15559	Pfappins Pharmacy	Indianapolis	6.4	Below standard.
15561	Cudworth Confectionery	Indianapolis	6.4	Below standard.
15562	Meffill's Pharmacy	Indianapolis	6.4	Below standard.
15563	Cudworth's Confectionery	Indianapolis	6.4	Below standard.
15585	Jessup & Antrim	Indianapolis	7.2	Below standard.
15572	A. E. Deudorff	Kokomo	6.0	Below standard.
15577	O. C. & W. E. Warick	Danville	5.8	Below standard.
15598	O. C. & W. E. Warick	Danville	6.0	Below standard.
15632	J. C. Kreusch	Anderson	6.4	Below standard.
15534	J. C. Kreusch	Anderson	4.2	Below standard.
15333	Kreusel Ice Cream Co.	Anderson	7.9	Below standard.
15334	Kreusel Ice Cream Co.	Anderson	5.8	Below standard.
15337	J. C. Kreusch	Anderson	6.0	Below standard.
15700	J. C. Kreusch	Anderson	6.0	Below standard.
15701	J. C. Kreusch	Anderson	6.0	Below standard.
15702	W. H. Lugel	Anderson	3.2	Below standard.
15707	Ft. Wayne Dairy Co.	Ft. Wayne	7.8	Below standard.
15716	A. C. Aurentz	Ft. Wayne	7.8	Below standard.
15739	Gaylord & Baumbauer	Wabash	5.6	Below standard.
15745	Wm. Newman	Wabash	7.6	Below standard.
15750	Delphi Ice Cream Co.	Delphi	6.8	Below standard.
15752	Harry L. Sharp	Delphi	6.8	Below standard.
15921	Howard	Culver	5.0	Below standard.
15947	Wm. Collins	Danville	5.6	Below standard.
15970	H. Sanger	Veedsburg	7.4	Below standard.
15973	G. G. Graham	Veedsburg	7.0	Below standard.
15996	C. W. Reeves	Crawfordsville	6.6	Below standard.
15998	C. J. Reiman	Crawfordsville	4.8	Below standard.
16076	Bradley Bros.	Wabash	4.2	Below standard.
16092	Hartell	Ft. Wayne	6.8	Below standard.
16093	C. P. Wise	Ft. Wayne	7.0	Below standard.
16090	Hartman Pharmacy	Ft. Wayne	6.8	Below standard.
16164	A. C. Coyle	Bloomington	6.0	Below standard

MEAT PRODUCTS.

Of the 162 samples of meat analyzed during the year, 99 were legal and 63 were illegal. The most common adulterant noted was starch, employed in greater or less quantities by manufacturers of sausages. The practice of adding starch to cheap meats has become very common within the last few years. The explanation given for its use is that sausage containing it can be stuffed into skins more readily and that the sausage cooks better and that it is more palatable. Another reason, no doubt, for its use, and one which explains the practice, is that by employing it considerable quantities of water may be incorporated with the meat, thus producing a sausage at a decidedly lower cost than if it were made from the meat and sausage alone. There can be no valid objection to the addition of flour to the sausage if the purchaser is advised of the fact that he is getting a cereal product and the sale of sausage labeled "SAUSAGE WITH CEREAL ADDED" will be allowed.

SAUSAGE—LEGAL.

No. of Sample.	Manufacturer or Retailer.	Where Collected.	No. of Sample.	Manufacturer or Retailer.	Where Collected.
13036	B. M. Hall	Indianapolis.	13880	H. C. Redman	Princeton.
13039	Louis Yorger	Indianapolis.	13938	Hilgenmeier & Bros.	Indianapolis.
13044	W. F. Johnson	Indianapolis.	13940	Chas. Bauer	Indianapolis.
13048	Conrad Bauer	Indianapolis.	13941	Chas. Gardner	Indianapolis.
13050	Chas. McClelland	Indianapolis.	13960	Crabill Bros.	Indianapolis.
13112	Harry Matske	Indianapolis.	13970	A. W. Berryhill	Indianapolis.
13316	Timmie Bros.	Lagrange.	13971	Frank Hebble	Indianapolis.
13379	Sent in from.	Indianapolis.	13976	Jacob Schruhl	Princeton.
13593	W. H. Best Sons.	Nappanee.	14051	Wm. Kuhn	Hammond.
13595	Young, Widmeyer & Anglin	Nappanee.	14055	Noach & Du Combe	Hammond.
13776	Hofers Meat Market.	Muncie.	14061	Chas. Berendt	Hammond.
13842	Pat. Martin	Indianapolis.	14065	Fred Kunsman	Hammond.
13843	Brown Bros.	Indianapolis.	14068	J. Eigelsack	Russelslar.
13851	Louis Yorger	Indianapolis.	14070	T. B. Ham	Russelslar.
13864	H. L. Donnan	Indianapolis.	14082	O. J. Tillett	Peru.
13865	C. Cook	Indianapolis.	14085	Louis Nelp	Peru.
13869	Horace Boston	Indianapolis.	14087	J. W. Miller	Peru.
13870	H. Volbroth	Indianapolis.	14099	McCaffrey & Co.	Peru.
13871	A. Gibson	Indianapolis.	14518	H. J. Rayburn	Converse.

SAUSAGE—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Remarks.
13027	Harry Matske	Indianapolis	Adulterated.
13046	W. E. Saver	Indianapolis	Adulterated.
13929	Frank Schissler	Indianapolis	Starch present.
13958	Herman Merklin.	Indianapolis	Starch present.
13992	Herman Merklin.	Indianapolis	Starch present.
13976	Johnson Grocery Co.	Indianapolis	Starch present.
13977	F. Schumeler	Indianapolis	Starch present.
13982	Louis Jung	Indianapolis	Starch present.
13983	A. Moldtman	Indianapolis	Starch present.
13985	F. Hilgenmeier	Indianapolis	Starch present.
13986	F. Hilgenmeier	Indianapolis	Starch present.

SAUSAGE—ILLEGAL—Continued.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Remarks.
13602	C. W. Covey	Princeton.	Starch present.
13668	F. W. Bowman	Indianapolis	Starch present.
13679	C. W. Covey	Princeton.	Starch present.
14034	L. P. Conner	Rochester.	Starch present.
14059	J. L. Humpfer Co.	Hammond.	Sulphites present.
14072	Roth Bros.	Rensselaer.	Starch present.
14090	C. W. Yoder	Rochester.	Starch present.
14091	C. F. Taylor	Rochester.	Starch present.
14094	L. P. Conner	Rochester.	Starch present.
14570	G. E. Barnett	South Bend.	Sulphites present.
14571	James Collard	South Bend.	Starch present.
14574	C. O. McCarty	South Bend.	Sulphites present.
14576	C. O. McCarty	South Bend.	Starch present.
14567	Buchler Bros.	South Bend.	Starch present.
14563	Peter Brurget	Mishawaka	Sulphites present.
14565	Fred Stockinger	Mishawaka	Starch present.
14530	Geo. E. Brown	Corydon.	Starch present.
14933	B. S. Rodgers	Bloomington.	Starch present.
14737	John Beasley	Bedford	Starch present.
14858	C. G. Stimpf	Washington.	Starch present.
14861	Henry Stimpf	Washington.	Starch present.

LIVERWURST—LEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Remarks.
13830	Frank Schimler	Indianapolis	Pure.
12841	Jas. F. Conannon	Indianapolis	Pure.
14064	Fred Kunsman	Hammond.	Pure.

LIVERWURST—ILLEGAL.

13834	Bills & Boettcher	Indianapolis	Starch present.
13857	F. Hilgemeier	Indianapolis	Starch present.

HAMBURGER—LEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.
13831	Frank Schimler	Indianapolis.
13847	E. Reynolds	Indianapolis.
13863	H. L. Dorman	Indianapolis.
13863	Frank A. Uhl	Indianapolis.
13866	C. Cook	Indianapolis.
13867	Frank Overman	Indianapolis.
13868	Horace Boston	Indianapolis.
13872	J. Schiele	Indianapolis.
13879	Walter Williams	Indianapolis.
13800	H. C. Redman	Princeton.
13923	Walter Williams	Indianapolis.
13972	Frank W. Hebble	Indianapolis.
13977	Jacob Sobrull	Princeton.
14050	Wm. Kuhn	Hammond.
14053	G. C. Austgen	Hammond.
14063	Fred Kunsman	Hammond.
14084	Louis Nelp	Peru.
14088	McCaffrey & Co.	Peru.
14093	L. P. Conner	Rochester.
14517	H. J. Rayburn	Converse.

HAMBURGER—LEGAL—Continued.

Lab. No.	Manufacturer or Retailer.	Where Collected.
14568	Buchler Bros.	South Bend.
14569	G. E. Barnett.	South Bend.
14572	J. Collard.	South Bend.
14580	H. L. Kirkwood.	Mishawaka.
14584	Fred Stoeckinger.	Mishawaka.
14686	Ben S. Rodgers.	Bloomington.
13026	Geo. Woessner.	Indianapolis.
13028	Paul Brandlein.	Indianapolis.
13029	Ed. Steinmets.	Indianapolis.
13030	Henry Coleman.	Indianapolis.
13031	Chas. Geible.	Indianapolis.
13032	Chas. Cherdron.	Indianapolis.
13033	F. W. Wurster.	Indianapolis.
13034	Sam Davis.	Indianapolis.
13035	Chas. Cook.	Indianapolis.
13076	Miller Bros.	Indianapolis.
13592	W. H. Best Sons.	Indianapolis.
13594	Young, Widmoyer & Anglin.	Nappanee.

HAMBURGER—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Remarks.
13928	L. P. Conner.	Rochester.	Sulphites present.
14033	L. P. Conner.	Rochester.	Sulphites present.
14058	J. L. Humpfer Co.	Hammond.	Sulphites present.
14060	Chas. Berendt.	Hammond.	Sulphites present.
14566	Rohrer.	South Bend.	Sulphurous acid present.
14573	J. P. Rosplachowski.	South Bend.	Sulphurous acid present.
14578	F. A. Weber.	Mishawaka.	Sulphurous acid present.
14582	Peter Brunet.	Mishawaka.	Sulphurous acid present.
13730	Louis Jung.	Indianapolis.	Sulphites present.
13622	F. Kepfler.	Winamac.	Adulterated.

WEINERWURST—LEGAL.

No. of Sample.	Manufacturer or Retailer.	Where Collected.	Remarks.
13313	J. Halfey & Myers.	Lagrange.	Pure.
13839	Jno. F. Concannon.	Indianapolis.	Pure.
13840	Jno. F. Concannon.	Indianapolis.	Pure.
13845	E. Reynolds.	Indianapolis.	Pure.
14052	Wm. Kuhn.	Hammond.	Pure.
14056	Noach & Du Combe.	Hammond.	Pure.
14099	J. Elgelsback.	Rensselaer.	Pure.

WEINERWURST—ILLEGAL.

No. of Sample.	Manufacturer or Retailer.	Where Collected.	Remarks.
11159	Evans & Jackman.	Warsaw.	Adulterated.
13833	Bills & Boettcher.	Indianapolis.	Starch present.
13835	Court House Grocery.	Indianapolis.	Starch present.
13836	Court House Grocery.	Indianapolis.	Starch present.
13849	Louis Yorger.	Indianapolis.	Starch present.
13850	Louis Yorger.	Indianapolis.	Starch present.
13856	F. Hilkemeier.	Indianapolis.	Starch present.
13859	H. Merklin.	Indianapolis.	Starch present.
13890	H. Merklin.	Indianapolis.	Starch present.
13878	H. Steck.	Indianapolis.	Starch present.
13894	A. Moldthan.	Indianapolis.	Starch present.
14092	C. W. Yoder.	Rochester.	Starch present.
14579	Frank Major.	Mishawaka.	Starch present.
14581	Major Bros.	Mishawaka.	Starch present.

BOLOGNA—LEGAL.

No. of Sample.	Manufacturer or Retailer.	Where Collected.	Remarks.
13502	Sent in from	Cambridge City	Pure.

BOLOGNA—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Remarks.
13837	Comm House Grocery.....	Indianapolis	Starch present.
13838	John F. Concannon	Indianapolis	Starch present.
13848	Louis Yorger	Indianapolis	Starch present.
13861	H. Merklin	Indianapolis	Starch present.
14095	L. P. Conner	Rochester	Starch present.

LARD—LEGAL.

No. of Sample.	Manufacturer or Retailer.	Where Collected.	Butyro Reading @ 40°c.	Halphen Test for Cotton-seed Oil.	Beef Fat.
13317	T. B. Gibco	Indianapolis	49.3	Negative.	None.
13025	Cornet Bros	Indianapolis	51.2	Negative.	None.
13037	B. M. Hall	Indianapolis	50.4	Negative.	None.
13038	Louis Yorger	Indianapolis	48.8	Negative.	None.
13041	Chas. Ogde	Indianapolis	50.4	Negative.	None.
13043	W. F. Johnson	Indianapolis	49.1	Negative.	None.
13047	Conrad Bauer	Indianapolis	50.1	Negative.	None.
13049	Chas. McClelland	Indianapolis	48.6	Negative.	None.
13116	W. J. Lewis	Indianapolis	49.4	Negative.	None.
13118	Otto Hafer	Indianapolis	48.3	Negative.	None.
13119	Joe Throm	Indianapolis	48.6	Negative.	None.
13227	Morris Gordon	Rockport	49.2	Negative.	None.
13574	Sent in from	Michigan City	49.0	Negative.	None.
13723	J. C. Hinton	Ft. Wayne	51.5	None	None.
13948	E. Reynolds	Indianapolis	50.7	None	None.
13952	Louis Yorger	Indianapolis	50.15	None	None.
13990	Walter Williams	Indianapolis	50.15	None	None.
13903	Ennis & White	Princeton	50.5	None	None.
13905	H. C. Reimon	Princeton	52.0	None	None.
13907	C. W. Covey	Princeton	51.35	None	None.
14552	Gus Keshner	Lawrenceburg	50.3	None	None.
14623	W. H. Keller & Co	Corydon	50.15	None	None.
14625	Corydon Packing Co.	Corydon	50.2	None	None.
14630	Geo. E. Brown	Corydon	50.2	None	None.
14636	Wm. Hilsmeier	Huntingburg	49.1	None	None.
14640	F. L. Lamkin	Huntingburg	49.9	None	None.
14648	Heick & Eggers	Huntingburg	50.6	None	None.
14860	C. G. Stumpp	Washington	51.0	None	None.
14863	H. J. Kramer	Washington	51.5	None	None.
14865	C. J. Berrens	Washington	51.6	None	None.
15102	Smith, Wells & Cave	French Lick	50.2	None	None.
15104	Livingood & Browning	French Lick	49.3	None	None.
15204	Reller & Wilson	West Baden	50.2	None	None.
15208	J. A. Felknor	West Baden	50.7	None	None.
15240	Scott & Cain	Sandborn		None	None.

LARD—ILLEGAL.

No. of Sample.	Manufacturer or Retailer.	Where Collected.	Butyro Reading @40°c.	Halpen Test For Cotton-seed Oil.	Beef Fat.
13001	Sent in from	Terre Haute	48.0	Negative	Present.
13064	Sent in from	Sullivan	48.7	Negative	Present.
13265	Sent in from	South Bend	47.9	Negative	Present.
13266	Sent in from	Lebanon	48.3	Negative	Present.
13040	Eugene Pasquire	Indianapolis	48.6	5% present	None.
13045	W. E. Sayer	Indianapolis	49.2	10% present	None.
13117	S. E. Woolemanider	Indianapolis	51.2	15% present	None.
13118	Hammond & Pasquier	Indianapolis	49.7	5% present	None.
13423	Likens Little	Linton	48.8	None	Present.
13844	Brown Bros.	Indianapolis	50.2	15% present	Present.
13875	Frank Schisler	Indianapolis	51.65	15% present	Present.
14864	W. G. Stumpp	Washington	49.0	None	Present.
15569	Hibbin, Holloway & Co	Indianapolis	49.2	None	Present.

MINCE MEAT—LEGAL.

Lab. No.	Manufacturer or Retailer.	Address	Remarks.
12773	W. J. Quan & Co., Chicago	Newcastle	Pure.
12937	Miller & Hart, Chicago	Medaryville	Pure.
13247	Lafayette Grocery Co., Lafayette	Lafayette	Pure.

PRESSED CORN BEEF—LEGAL.

13314	J. Halfley & Myers	Lagrange	Pure.
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MISCELLANEOUS MEAT PRODUCTS—LEGAL.

Lab. No.	Article Analysed.	Manufacturer or Retailer.	Where Collected.	Remarks.
13864	Veal loaf	Chas. Girble	Indianapolis	
14062	Dried beef	Chas. Berendt	Hammond	
14074	Corned beef	Rothe Bros.	Rensselaer	
14083	Veal loaf	O. J. Tillett	Peru	
14503	Red salmon	Best Bros.	Jeffersonville	
14575	Dried beef	C. O. McCarty	South Bend	
14843	Pressed ham	Cotton & Thalbemar	Mishawaka	
14957	Pork and beans	W. E. Musser	Freedom	

MISCELLANEOUS MEAT PRODUCTS—ILLEGAL.

13855	Bloodwurst	F. Hilgemeier	Indianapolis	Starch present
14073	Head cheese	Rothe Bros.	Rensselaer	Starch present
14096	Luncheon beef	L. P. Conner	Rochester	Starch present
14545	Corned beef hash	Mooney	Terre Haute	Starch present
14842	Minced ham	Cotton & Thalbemar	Mishawaka	Starch present
15627	Meat	J. M. Atkinson, M. D.	Eaton	Strychnin pres't.

OYSTERS—ILLEGAL.

Lab. No.	Retailer.	Where Collected.	Number Oysters Per Pint.	Gross Weight, Grams.	Weight of Meat, Grams.	Per Cent. of Water in Meat.	Per Cent. of Solids in Meat.	Weight of Liquor	Per Cent. Water in Liquor.	Per Cent. Solids in Liquor.	Per Cent. Water in Sample.	Per Cent. Meat in Sample.	Total Solids in Sample.	Per Cent. Solids in Sample.	Remarks.
13032	Geo. Sowder.....	Market House.....	61	475	375	80.16	10.84	100	98.12	1.87	20.05	79.95	42.49	8.945	Adulterated with water.
13033	Mrs. T. J. Egan.....	Market House.....	33	470	365	80.231	7.00	105	98.72	1.27	22.34	77.66	20.40	6.255	Adulterated.
13034	Indianapolis Fish and Oyster Co.....	Indianapolis.....	54	500	367	80.86	13.14	133	96.91	3.09	28.60	73.4	32.3	10.47	Watered.
13036	Geo. A. Nielsen.....	Indianapolis.....	32	464	337	85.88	14.12	77	96.25	3.75	16.60	83.4	37.5	12.40	Pure.

MAPLE PRODUCTS.

During the year, especially during the spring months, many samples of maple sugar and syrup were analyzed, mostly at the request of producers of the country product. It is interesting to know that of the 66 samples analyzed, 17 were adulterated. This is a striking contrast to previous years when a good pure maple syrup was a rarity. The character of maple sugar is also decidedly improved.

MAPLE SYRUP—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Polarization, Direct.	Polarization, Invert.	Sucrose.	Total Ash.	Ash Soluble.	Ash Insoluble.	Alkalinity of Ash Soluble.	Alkalinity of Ash Insoluble.	Per Cent. Water.	Lead Number.	Remarks.
12774	Wm. R. Manierre.		-39.0	-23.0	45.98		.226	.08					Adulterated with cane sugar.
12781	Craftsman Guild Kitchen.		+64.0	-21.12	64.5		.30	.78					Adulterated, partly cane sugar.
12773	Puritan Maple Syrup Co.	Providence, R. I.	+53.2	-19.8	56.08		.43	.78					Adulterated, partly cane sugar.
12786	Sent in from.	Waveland, Ind.	+52.6	-22.8	56.90		.008	.24					Adulterated with cane sugar.
12287	Sent in from.	Waveland, Ind.	+57.0	-22.0	59.85		.10	.06					Adulterated with cane sugar.
12290	Ohio Western Reserve Co.	Cleveland, Ohio.	+65.4	-19.8	64.9		.13	.06					Adulterated with cane sugar.
12786	Chas. Ritter.	Spencer.			59.3		.81	.09	68.	32.			Adulterated.
13702	A. M. Peters (sent in).	Marion.			47.8		1.08	.72	.66	64.	36.41		Cane sugar syrup.
13023	W. D. Huffman Co.	Indianapolis.			60.9		.55	.04	.01	0.0	4.0		Adulterated.
13027	S. J. Wilson.	Indianapolis.			34.5		.60	.30	.30	40.	78.		Adulterated.
13453	Dr. S. C. Newlin (sent in).	Anderson.			46.9		.77	.50	.27	64.	37.73		Adulterated.
14614	W. D. Huffman.	Indianapolis.	+65.0	-20.4	66.0		.03	.02	.01		31.8	38.	Only trace of maple.
14614	W. D. Huffman.	Indianapolis.	+65.8	-20.4	66.0		.03	.02	.01		31.0	40.	Contains only trace of maple.
14615	W. D. Huffman.	Indianapolis.	+65.8	-20.4	66.0		.03	.00			31.3	38.	Contains only trace of maple.

MAPLE SUGAR—LEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Polarization, Direct.	Polarization, Invert.	Sucrose.	Total Ash.	Ash Soluble.	Ash Insoluble.	Alkalinity of Ash Soluble.	Alkalinity of Ash Insoluble.	Per Cent. Water.	Lead Number.	Remarks.
12280	Lot V. Oglesby	La Porte.	+90.0	-33.2	92.6	.28	.35	.03	1.6	1.6			Labeled "Blended Sugar."
12919	Mrs. Miller.	Indianapolis.	+57.2	-25.4	85.47	1.16	.39	.77	1.04	1.00		2.24	Pure.
12973	Chas. Raliback.	Indianapolis.	+72.0	-23.0	71.94	2.06	.78	1.30	1.96	1.04		3.26	Pure.
14627	David Shann.	Indianapolis.	+64.0	-25.4	86.02	1.66	.58	.86	.92	1.06		2.68	Pure.
14628	David Shann.	Indianapolis.	+82.0	-15.0	83.74	1.83	.46	.89	.86	.85	45.00	2.68	Pure.
14628	John Sech.	Georgetown.	+55.2	-24.4	60.93	1.83	.71	1.24	1.66	.85		3.99	Pure.
15610	Home Preserving Co.	Indianapolis.				1.06	.30	.67	.63	1.00			Pure.

MAPLE SUGAR—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Polarization, Direct.	Polarization, Invert.	Sucrose.	Total Ash.	Ash Soluble.	Ash Insoluble.	Alkalinity of Ash Soluble.	Alkalinity of Ash Insoluble.	Per Cent. Water.	Lead Number.	Remarks.
12901	F. L. Forthofer.	Princeton.	+104.	+6.4	74.69	.16	.08	.07	.16	.20		14	Adulterated.
12921	Bay State Maple Sugar Co.	Boston.			73.3	.44	.21	.23	.32	.56		3.41	Adulterated.
12957	W. L. Doughty.	Kyusa.	+64.0	-22.4	66.13	1.75	.84	.91	.96	1.40			Low grade sugar.

VINEGAR.

One hundred and twenty-six samples of vinegar were analyzed during the year of which 80 were legal and 46 were illegal. The vinegars classed as illegal were usually so ranked because of the fact that they were low in acid; either because of immaturity or intentional dilution. Occasionally samples came to the market as cider vinegars when, in fact, they were only artificial. Most of such goods are manufactured in large business centers and shipped into the state in willful violation of the law.

CIDER VINEGAR—LEGAL.

Lab.	Manufacturer or Retailer.	Where Collected.	Acidity, %	Solids.	Ash, %	Alkalinity of Ash.	Color.	Lead Acetate Precipitate.	Polarisation.
11717	Caro Vinegar Co	Caro, Mich.	4.03	2.613	0.220	24.	Normal	Slight	+0.
12923	Heinz	Indianapolis	4.75	2.383	0.283	23.	Normal	Medium	-2.6
12967	Sent in from	Indianapolis	4.44	2.426	0.229	26.	Normal	Heavy	+0.0
12981	Sent in from	Muncie	10.06						
12982	Sent in from	Muncie	5.30						
12986	Sent in from	Muncie	4.11	2.446	0.396	44.	Normal	Heavy	-1
12987	Sent in from	Muncie	4.67	2.606	0.426	42.	Normal	Heavy	-1
13007	N. A. Moore	Indianapolis	5.77	2.222	0.292	32.	Normal	Medium	-3.6
13009	Columbia Grocery	Indianapolis	4.83	2.480	0.362	36.	Normal	Medium	-2.0
13011	Chas. W. Miller	Indianapolis	4.85	2.733	0.375	38.	Normal	Heavy	-3.6
13015	R. M. Mueller	Indianapolis	5.28	2.540	0.305	34.	Normal	Heavy	-3.6
13018	A. E. Ford	Indianapolis	4.27	2.087	0.311	28.	Normal	Slight	-0.4
12945	F. R. Steele & Co.	Lagrange	4.28	3.552	0.380	22.	Normal	Medium	-1.3
12963	J. T. R. White	Indianapolis	4.20	1.957	0.350	22.	Normal	Slight	-0.6
12967	Geo. M. White	Lagrange	3.76	1.908	0.304	36.	Normal	Slight	-1
13011	Geo. B. Moore	Lagrange	4.28	2.493	0.265	24.	Normal	Heavy	-2
13250	Sent in from	Lawfordville	4.12	1.434	0.305	27.	C. W. C.	Heavy	+0.0
13425	J. W. Crutcher	Ellettsville	5.64	2.462	0.244	26.	Normal	Medium	+0.0
13463	Sent in from	Noblesville	5.97	1.352	0.250	28.	Normal	Light	+0.0
13493	Sent in from	Clarks Hill	4.06	2.574	1.194	24.	Normal	Light	+0.0
13601	Sent in from	Clarks Hill	4.44	1.619	0.237	28.	Normal	Medium	+0.0
13602	Sent in from	Clarks Hill	4.44	1.227	0.252	30.	Normal	Medium	+0.0
13603	Sent in from	Clarks Hill	5.24	1.220	0.272	30.	Normal	Medium	+0.0
13605	Sent in from	Clarks Hill	5.23	1.230	0.265	31.	Normal	Medium	+0.0
13606	Sent in from	Clarks Hill	5.53	1.587	0.265	26.	Normal	Medium	+0.0
13609	Sent in from	Clarks Hill	6.16	1.532	0.242	24.	Normal	Medium	+0.0
13610	Sent in from	Clarks Hill	5.96	1.065	0.230	24.	Normal	Medium	+0.0
13657	Laura C. Jones	Albion	4.05	2.160	0.320	32.	Normal	Slight	+0.0
13778	Grocer's Supply Co	Indianapolis	4.00	2.176	0.361	24.	Normal	Medium	+0.0
14527	Grocer's Supply Co	Indianapolis	4.05	2.072	0.320	28.	Normal	Medium	+0.0
14540	James McGrath	Lawnburg	4.97	2.712	0.304	22.	Normal	Medium	+0.0
14628	C. H. Miller	Corydon	4.87	2.817	0.342	22.	Normal	Medium	+0.0
14642	H. H. Hilsmeier	Huntingburg	4.16	2.442	0.442	25.	Normal	Very Heavy	+0.0
14646	Grocer's Supply Co	Indianapolis	4.42	2.041	0.345	28.	Normal	Heavy	+0.0
14810	J. F. Crane	Stoner	3.77	2.280	0.343	40.	Normal	Heavy	+0.0
15030	J. M. Zon	Clarks Hill	4.03	5.052	0.464		Normal	Heavy	+0.0
15031	J. M. Zon	Clarks Hill	5.15	1.378					
15032	J. M. Zon	Clarks Hill	6.30	1.242					
15033	J. M. Zon	Clarks Hill	5.19	1.213					
15033	J. M. Zon	Clarks Hill	5.19	1.448					

CIDER VINEGAR—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Additiv.	Solids.	Ash.	Alkalinity of Ash.	Color.	Acid Precipitate	Polarisation.	Remarks.
13221	Sent in from	Kokomo.	2.74	0.670	0.045	4.		None.	+ .5	Below standard.
13014	M. C. Shea & Co	Indianapolis.	3.96	2.725	0.370	33.		Heavy.	+ -0.0	Immature vinegar, below standard.
13268	Sent in from.	Rockport.	2.80	0.973	0.185	20.		Slight.	+ -0.0	Below standard.
13269	Sent in from.	Rockport.	3.58	0.531	0.114	11.		None.	+ -0.0	Caramel color, below standard.
13388	Sent in from.	Clark's Hill.	3.26	1.382	0.260	24.		Medium.	- .8	Immature vinegar below standard.
13389	Sent in from.	Clark's Hill.	5.52	1.218	0.230	30.		Medium.	- .4	Low solids, below standard.
13370	Sent in from.	Clark's Hill.	3.82	1.907	0.290	16.		Medium.	-1.0	Below standard.
13371	Sent in from.	Clark's Hill.	4.72	1.723	0.295	30.		Heavy.	- .4	Below standard.
13372	Sent in from.	Clark's Hill.	4.80	1.137	0.379	32.		Medium.	- .6	Below standard.
13373	Sent in from.	Clark's Hill.	3.58	1.385	0.235	28.		Medium.	- .4	Below standard.
13374	Sent in from.	Clark's Hill.	4.68	1.337	0.257	28.		Medium.	- .8	Below standard.
13375	Sent in from.	Clark's Hill.	5.53	1.361	0.224	26.		Heavy.	- .8	Below standard.
13376	Sent in from.	Clark's Hill.	5.04	1.187	0.256	26.		Medium.	- .6	Below standard.
13377	Sent in from.	Clark's Hill.	4.50	1.163	0.227	18.		Heavy.	- .8	Below standard.
13378	Sent in from.	Clark's Hill.	3.54	0.369	0.245	28.		Medium.	-1.2	Below standard.
13531	Spencer, Hogan & Co	Warsaw.	4.10	0.272	0.045	4.		None.	+ 1.0	Colored, distilled, adulterated.
13590	Sent in from.	Clark's Hill.	3.80	1.012	0.252	30.		Medium.	+ -0.0	Below standard.
13604	Sent in from.	Clark's Hill.	3.93	0.981	0.243	30.		Light.	+ -0.0	Below standard.
13607	Sent in from.	Clark's Hill.	3.90	1.465	0.277	32.		Heavy.	+ -0.0	Below standard.
13707	Sent in from.	New Castle.	2.85	1.530	0.380	42.		None.	+ -0.0	Below standard.
13905	David Fabburg.	Indianapolis.	4.50	0.281	0.038	4.		None.	+ 1.2	Caramel color, colored, distilled, adulterated.
13290	W. H. Berry.	Spencer.	6.28	0.525	0.063	8.		None.	+ -	Colored distilled, adulterated.
13756	J. Rose Robertson.	Brownstown.	3.87	5.985	.420	35.	Normal.	Heavy.	+ -4	Immature, low in acidity.
13867	Berkey Bros.	Salem.	5.08	1.022	.318	35.	Normal.	Medium.	+ -0.0	Adulterated.
13908	Berkey Bros.	Salem.	4.04	6.920	.411	48.	Partly removed.	Very slight.	+ -0.0	Citric acid present.
13913	Wm. Rafferty.	Princeton.	4.66	0.208	.028		Removed.	None.	+ -0.0	Adulterated.
14550	D. A. Stockman.	Lawrenceburg.	3.74	1.644	.252	12.	Normal.	Medium.	+ -0.0	Low in acidity.
14622	H. H. Keller Co.	Corydon.	3.70	3.271	.538	44.	Normal.	Heavy.	+ -0.0	Low in acidity.
14629	C. M. Miller.	Corydon.	2.92	.342	.037	6.	C. W. C.	None.	+ -0.0	Low in acidity.
14643	Alvey Earlen.	Huntingburg.	3.25	.277	.031	2.	Normal.	None.	+ 1.4	Low in acidity.
14646	E. W. Blunker.	Huntingburg.	3.75	2.104	.200	11.	Normal.	Medium.	+ 1.6	Low in acidity.
14746	Evans Bros.	Mitchell.	2.74	.407	.062	2.	C. W. C.	None.	+ 1.8	Low in acidity.
14747	J. F. Mathews.	Mitchell.	3.26	3.280	.546	31.	Normal.	Heavy.	- .8	Low in acidity.
14749	Harry Coopple.	Mitchell.	3.83	.813	.073	2.	Normal.	None.	+ 1.0	Low in acidity.
14752	F. R. Brame.	Mitchell.	2.88	.929	.088	4.	Normal.	None.	+ .4	Low in acidity.
14803	Dr. Dilley.	Brasil.	2.85	1.630	.441	38.	Normal.	Heavy.	+ 0.0	Low in acidity.
14955	Johnson & Co	Freedom.	3.72	1.509	.033	2.	Normal.	None.	+ 6.0	Low in acidity.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Acidity.	Solids.	Ash.	Alkalinity of Ash.	Lead Acetate Precipitate	Polarization.	Remarks.
12935	Reiser & Wilson.	French Lick.	6.09	3.152	.229	12.	None.	+4.4	Artificial, adulterated.
12971	E. A. Palmer.	West Baden.	2.63	1.076	.219	24.	None.	+0	Low in acidity.
12984	C. W. Jackson & Sons	Indianapolis.	3.76	2.269	.316	24.	Medium.	-2.2	Low in acidity.
12990	Wm. Driver.	Lagrange.	2.15	1.430	.413	30.	Medium.	+0	Low in acidity and solids.
12995	Peter Eppelstein.	Wabash.	3.45	2.740	.051	6.	None.	+1.2	Below standard.
12998	Clark Bros.	Wabash.	3.23	1.968	.420	36.	Heavy.	.....	Below standard.
12999	L. D. Landenberger	Wabash.	3.77	2.767	.249	22.	Heavy.	.....	Below standard.
13079	M. L. Davis.	Medora.	2.54	2.178	0.379	38.	Slight.	1.8	Below standard.

DISTILLED VINEGAR—LEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Acidity.	Solids.	Ash.	Alkalinity of Ash.	Lead Acetate Precipitate	Polarization.	Remarks.
12980	Sent in from.	Indianapolis.	4.13	0.534	0.083	6.0	Slight.	+0	Colored, distilled.
12983	Sent in from.	Muncie.	9.92	.....	.....	.....	.....	.....	Slightly lower than 100 grain.
12984	Sent in from.	Muncie.	4.50	.....	.....	.....	.....	.....	Labeled correctly, caramel color.
12988	Sent in from.	Kokomo.	3.32	.....	.....	.....	.....	.....	Grain vinegar.
13551	E. L. Mort.	N. Manchester.	4.70	.232	.050	2.0	Slight.	+0	Distilled.
14633	Wm. Hilsmeier.	Huntingburg.	4.29	.358	.024	3.0	None.	+2.2	Distilled.
14641	H. H. Hilsmeier.	Huntingburg.	4.62	.265	.025	3.0	None.	+1.4	Distilled.
14645	Louis Katterburg.	Huntingburg.	6.05	.264	.046	5.0	None.	+2.0	Distilled.
14730	Grocery Co.	Bedford.	4.53	.502	.099	2.0	None.	+1.6	Distilled.
14748	J. F. Mathews.	Mitchell.	5.11	.380	.087	2.4	None.	+1.2	Distilled.
14751	John Dalton.	Mitchell.	4.17	.412	.054	6.0	None.	+1.4	Distilled.
16056	C. W. Huston.	Terre Haute.	4.30	.359	.062	40.0	None.	+1.2	Colored, distilled.
15649	Wm. Robinson.	Robinson.	5.49	.314	.048	20.0	None.	+1.6	Colored, distilled.
15649	Thompson & Wright.	Wabash.	4.14	.217	.340	30.0	None.	+1.6	Colored, distilled.
15651	Geo. Laumer.	Wabash.	4.28	.340	.480	20.0	None.	+1.0	Colored, distilled.

BEVERAGES.

Of the 308 samples of such summer drinks as pops, ginger ale, soda, fruit ciders, root beers, and such proprietary articles as iron brew, orangeade, etc., 177 were legal and 131 were illegal. Those classed as illegal or adulterated usually contained an artificial sweetener in the form of saccharin. The use of saccharin is in direct violation of the law in that it is contrary to that section which prohibits the mixing of a substance in food so as to reduce its quality or strength and also of that section which prohibits the substitution of any substance for the article. Many other samples contained benzoate of soda added as a preservative. Others were colored in imitation of the article.

BEVERAGES—LEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Name of Beverage.	Preservatives or Artificial Sweetener.
12924	Sent in from	Auburn	Cider	Pure.
13006	Moore Grocery	Indianapolis	Cider	Pure.
13270	Wm. M. Waltman	Bean Blossom	Fermented Apple Juice	Pure.
13284	Price & Lucas, Louisville, Ky.	Roschdale	Cider	Pure.
13351	J. Hungerford Smith, Rochester N.Y.	Medaryville	Conc. Claret	Natural color.
13352	J. Hungerford Smith, Rochester N.Y.	Medaryville	Conc. Cream De Menth.	Color doubtful.
13353	J. Hungerford Smith, Rochester N.Y.	Medaryville	Buffalo Punch	Natural color.
13520	Sent in from	Marion	Cider	Pure.
13574	Fred Witchens	Knox	Orange Soda	None.
13575	Fred Witchens	Knox	Chocolate Cream	None.
13576	Fred Witchens	Knox	Chocolate Cream	None.
15091	A. Shorter	Winamac	Cider	None.
15112	Crown Cordial Co.	New York City	Syrup with Wine	None.
15230	Jarret & Galenshue	Sandborn	Soda Pop.	None.
15231	Jarret & Galenshue	Sandborn	Soda Pop.	None.
15372	Jno. Dickerson	Richmond	Berry Bounce	None.
15405	Geo. B. Lee	French Lick	Hop Cream	None.
15408	Walter Smith	Mitchell	Root Beer	None.
15409	Walter Smith	Mitchell	Cream Soda	None.
15414	F. A. Thule	Vincennes	Pepp Cola	None.
15416	F. A. Thule	Vincennes	Blood Orange Pop.	None.
15420	Becker Bottling Works	Vincennes	Lemon Soda	None.
15421	Becker Bottling Works	Vincennes	Strawberry Pop.	None.
15423	Becker Bottling Works	Vincennes	Chocolate Pop.	None.
15469	E. B. Phillips	Spencer	Bottled Soda	None.
15470	E. B. Phillips	Spencer	Bottled Soda	None.
15474	E. B. Phillips	Spencer	Bottled Soda	None.
15475-80	E. B. Phillips	Spencer	Bottled Soda	None.
15481-89	E. B. Phillips	Spencer	Bottled Soda	None.
15503	Ellie G. Hooper	Bicknell	Pop	None.
15507	Ellie G. Hooper	Bicknell	Pop	None.
15519	Ellie G. Hooper	Bicknell	Pop	None.
15520	Ellie G. Hooper	Bicknell	Pop	None.
15557	Chas. Mayer & Co.	Hammond	Soda	None.
15572	Daniel Clemens	Ft. Wayne	Iron Brew	None.
15573	Daniel Clemens	Ft. Wayne	Ginger Ale	None.
15574	Daniel Clemens	Ft. Wayne	Pop	None.
15577	Weigand Bros.	Ft. Wayne	Red Pop	None.
15579	David Klotz	Ft. Wayne	Juniper Ade	None.
15580	Joe Dicola	Ft. Wayne	Juniper Ade	None.
15582	Joe Attala	Ft. Wayne	Chocolate Soda	None.
15594	C. Smith	Kokomo	Red Soda	None.
15595	C. Smith	Kokomo	Ginger Ale	None.
15617	Alsop & Ward	Carlisle	Blood Orange	None.
15591	C. Smith	Kokomo	Iron Brew	None.
15592	I. P. Draper	Kokomo	Cream Soda	None.
15593	C. Smith	Kokomo	White Soda	None.
15616	O. M. Sebring	Shelburn	Champagne Cider	None.
15609	Adam Sines	Delphi	Pop	None.
15674	Jos. Stewart	Colburn	Pop	None.
15675-7	Jos. Stewart	Colburn	Pop	None.
15683	Howard McKimman	Rockfield	Grape Cider	None.
15686	Wm. C. Smith	Pittsburg	Pop	None.
15757	Ed. Welch	Monticello	Apple Cider	None.
15759	M. Watkins	Monticello	Raspberry Cider	None.
15761	R. W. Swisher	Flora	Blood Orange	None.
15762	R. W. Swisher	Flora	Pop	None.
15763	Wm. Luterbach	Paoli	Hop Cream	None.
15784	Harry L. Sharp	Delphi	Pop	None.
15786	Wm. Richter	Vincennes	Blood Orange	None.
15817	Gust. Hoffner	Butler	Cream Soda	None.
15818	Gust. Hoffner	Butler	Lemon Sour	None.
15819	Gust. Hoffner	Butler	Pop	None.
15824	George Stout	Butler	Birch Beer	None.
15825	George Stout	Butler	Wild Cherry Phosphate	None.
15829	L. E. Dempsey	Butler	Apple Cider	None.
15830	L. E. Dempsey	Butler	Pop	None.
15837	J. C. Miller	Columbia City	Apple Cider	None.
15894	Alva L. Porter	Culver	Pop	None.
15895	Alva L. Porter	Culver	Pop	None.
15896	Howard	Culver	Pop	None.
15897	Howard	Culver	Pop	None.
15898	Howard	Culver	Pop	None.
15899	Howard	Culver	Pop	None.

BEVERAGES—LEGAL—Continued.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Name of Beverage.	Preservatives or Artificial Sweetener.
15900-8	Howard	Culver	Pop	None.
15909	L. C. Rex	Mulberry	Grape Juice	None.
15911-23	Fred Waldron	Mulberry	Pop	None.
15924	Ray C. Fickle	Mulberry	Pop	None.
15925	Ray C. Fickle	Mulberry	Pop	None.
15929	Clarence Verfus	Williamsport	Pop	None.
15931	Clarence Verfus	Soda	None.	None.
15932	Clarence Verfus	Williamsport	Soda	None.
15933	Wm. F. Verfus	Williamsport	Soda	None.
15934-5	Wm. F. Verfus	Williamsport	Soda	None.
15936-41	Pitcher Bros.	Williamsport	Pop	None.
15943	Wm. Collins	Williamsport	Pop	None.
15944-6	Wm. Collins	Williamsport	Pop	None.
15951	C. B. Burlington	Attica	Bottled Pop.	None.
15952	Geo. A. Wheelock	Attica	Pop	None.
15953	Geo. A. Wheelock	Attica	Pop	None.
15954	Geo. Feinertstein	Attica	Pop	None.
15956	P. J. O'Donnell	Attica	Pop	None.
15957-66	P. J. O'Donnell	Attica	Pop	None.
15975-83	Jas. Sullivan	Veandersburg	Pop	None.
15984	M. L. Watson	Covington	Pop	None.
15986-94	J. W. Miller	Covington	Bottled Pop.	None.
16002	Hiram Brooks	Stockwell	Blood Orange	None.
16004-11	B. F. Conrad	Darlington	Pop	None.
16012	Ben Honecker	Darlington	Blood Orange	None.
16048	H. C. Hummel	Arcadia	Orange Pop	None.
16049	H. C. Hummel	Arcadia	Iron Brew	None.
16050	H. C. Hummel	Arcadia	Red Pop	None.

BEVERAGES—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Kind of Sample.	Remarks.
13054	Sent in from	Merion.	Jack Foot Soda.	Saccharin and benzoate present.
13058	Hixson & David Co., Atlanta, Ga.	Sullivan.	Jack Foot Soda.	Benzoate of soda present.
13059	W. J. Roney	Sullivan.	Jack Foot Soda.	Benzoate of soda present.
13103	W. J. Roney	Shoals.	Jersey Cream Soda.	Contains saccharin.
13213	Price & Lecky, Louisville.	Brain		Benzoate present.
13254	Reid & Co., Vincennes, Ind.	Terre Haute.		Benzoate present.
13271	Reid & Co., Vincennes, Ind.	Indianapolis.		Benzoate present.
13279	Price & Lecky Co., Chicago, Ill.	Terre Haute.		Benzoate present.
13285	Price & Lecky Co., Louisville, Ky.			Saccharin and benzoate present.
13287	Sent in from	Crawfordsville		Benzoate present.
13446	Geo. E. Burget	Terre Haute.		Benzoate present.
13448	W. J. Ryan & Co., Chicago, Ill.	Delphi.		Benzoate present.
13449	Cleveland Cider Co., Unionville, Ohio.	Lorainport.		Benzoate present.
13441	E. E. Fennema, St. John, Mich.	Fort Wayne.		Benzoate present.
13442	A. C. Daniels, Nankas, Mich.	Fort Wayne.		Benzoate present.
13444	Sprague, Warner & Co., Chicago, Ill.	Fort Wayne.		Benzoate present.
13584	Geo. S. McCann & Co., Chicago, Ill.	Knox.		Benzoate present.
13725	W. J. Hornsby	Hammond.	Phospho Brew Soda.	Saccharin present.
13726	W. J. Hornsby	Hammond.	White Soda.	Saccharin present.
14870	English Hotel Bar.	Indianapolis.	White Soda.	Contains saccharin.
14871	Herman Hillman.	Indianapolis.	White Soda.	Contains saccharin.
14872	Herman Hillman.	Indianapolis.	White Soda.	Contains saccharin.
14873	Louis Sattinger.	Indianapolis.	White Soda.	Contains saccharin.
14874	Louis Sattinger.	Indianapolis.	White Soda.	Contains saccharin.
14875	Carl Carpenter.	Indianapolis.	White Soda.	Contains saccharin.
14876	Carl Carpenter.	Indianapolis.	White Soda.	Contains saccharin.
15022	G. Goehner.	South Bend.	Oreherade.	Saccharin present.
15080	A. Shorter.	Winamac.	Junl.	Benzoate.
15166	Cave & Martin.	Sullivan.	Oreherade.	Saccharin.
15167	Dick Dudley.	Sullivan.	Oreherade.	Saccharin.
15168	W. M. Drayer.	Sullivan.	Oreherade.	Saccharin.
15224-34	Jarret & Gubenshue.	Sandborn.	Soda Pop.	Saccharin (10 cases).
15244	T. J. Witham.	Montezuma.	Art. Cider.	Saccharin and coal tar color.
15245	T. J. Witham.	Montezuma.	Sweet Cider.	Saccharin, benzoate acid, and coal tar color.
15246	Jesse G. Howell.	Montezuma.	Bottled Soda.	Saccharin and benzoate.
15289	J. M. Sweeney.	Dugger.	Bottled Soda.	Saccharin present.
15290	J. M. Sweeney.	Dugger.	Bottled Soda.	Saccharin present.
15355	C. D. Storms.	Richmond.	Iron Brew.	Saccharin present.
15356	C. D. Storms.	Richmond.	Red Pop.	Salicylic acid.
15370	J. Fowler.	Richmond.	Red Pop.	Salicylic acid.
15373	Jno. Dickerson.	Richmond.	Pop.	Salicylic acid.
15375	Chas. Heck.	Richmond.	Pop.	Salicylic acid.

BEVERAGES—ILLEGAL—Continued.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Kind of Sample.	Remarks.
15377	J. T. Foster.	Richmond	Pop.	Salicylic acid.
15381	J. E. Bergman	Kokomo	Cream Soda	Saccharin.
15380	J. E. Bergman	Kokomo	Orange Cider	Saccharin.
15371	J. E. Foster	Richmond	Pop.	Salicylic acid present.
15374	J. E. Foster	Richmond	Pop.	Salicylic acid present.
15375	J. E. Foster	Richmond	Pop.	Salicylic acid present.
15394	J. E. Bergman	Kokomo	Pop.	Saccharin present.
15391	Walter Smith	Mitchell	Merry Widow High Ball	Saccharin present.
15407	Walter Smith	Mitchell	Merry Widow High Ball	Saccharin present.
15410	F. A. Thuis	Vincennes	Lemon Soda	Saccharin present.
15411-13	F. A. Thuis	Vincennes	Pop.	Saccharin present.
15417	F. A. Thuis	Vincennes	Lemon Sour	Saccharin present.
15419	Recker Bottling Works	Vincennes	Orchardade	Benzoate of soda.
15422	Recker Bottling Works	Vincennes	Pop.	Benzoate of soda.
15471	E. B. Phillips	Spencer	Soda	Benzoate of soda.
15475	E. B. Phillips	Spencer	Soda	Benzoate of soda.
15476	E. B. Phillips	Spencer	Soda	Benzoate of soda.
15481	E. B. Phillips	Spencer	Soda	Benzoate of soda.
15485	E. B. Phillips	Spencer	Soda	Benzoate of soda.
15490	E. B. Phillips	Spencer	Soda	Benzoate of soda.
15491	E. B. Phillips	Spencer	Soda	Benzoate of soda.
15499	Ellis G. Hooper	Bicknell	Pop.	Saccharin and benzoate of soda.
15500	Ellis G. Hooper	Bicknell	Pop.	Saccharin.
15506	Ellis G. Hooper	Bicknell	Pop.	Saccharin.
15504	Ellis G. Hooper	Bicknell	Pop.	Saccharin.
15505-18	Ellis G. Hooper	Bicknell	Pop.	Saccharin.
15521-2	Ellis G. Hooper	Bicknell	Pop.	Saccharin.
15523	Ellis G. Hooper	Bicknell	Pop.	Benzoate of soda.
15527	Ellis G. Hooper	Bicknell	Pop.	Saccharin and benzoate.
15546	M. F. Maurer	Muncie	Egyptian Malt	Benzoate of soda.
15547	M. F. Maurer	Muncie	Romberg	Saccharin and benzoate of soda.
15548	Shas Hale	Muncie	Cream	Saccharin and benzoate of soda.
15549-51	Shas Hale	Muncie	Horch Beer	Saccharin.
15551	Shas Hale	Muncie	Pop.	Saccharin.
15553	Tarnogradski Bros	Hammond	Soda	Saccharin.
15555	Tarnogradski Bros	Hammond	Soda	Saccharin.
15556	Mrs. Glindler & Sons	Hammond	Soda	Saccharin.
15575	F. D. Evans	Ft. Wayne	Pop.	Saccharin.
15576	F. D. Evans	Ft. Wayne	Pop.	Saccharin.
15578	Wienand Bros.	Ft. Wayne	Black Pop	Salicylic acid.
15581	Joe Attalis	Ft. Wayne	Iron Brew	Saccharin and benzoate of soda.

15618	Almy & Ward.	Carlsile.	Iron Brew.	Saccharin.
15619-20	J. A. Rootaberry	Carlsile.	Blood Orange.	Benzoate of soda.
15621	J. A. Rootaberry	Carlsile.	Lemon Soda.	Benzoate of soda.
15622	Held & Brown.	Carlsile.	Blood Orange.	Saccharin.
15623	Ed. McCann	Carlsile.	Berry Widow Pop.	Saccharin.
15670-3	Joseph Stewart.	Columb.	Pop.	Saccharin.
15676-9	Harry L. Sharp.	Columb.	Pop.	Coal tar present.
15753	Henry Crose	Delphi.	Pop.	Benzoate of soda.
15756	Henry Crose	Delphi.	Cherry Cider.	Saccharin.
15764	Wm. Richter	Vincennes.	Kelly's Smiles.	Benzoate of soda.
15765-8	Wm. Richter	Vincennes.	Soda and Rye Ole.	Saccharin.
15814	Gust Hofner	Butler.	Ale.	Saccharin and benzoate.
15815	Gust Hofner	Butler.	Ginger Ale.	Benzoate of soda.
15816	Gust Hofner	Butler.	Phosphate.	Benzoate of soda and saccharin.
15820	Gust Hofner	Butler.	Orangeade.	Benzoate of soda and saccharin.
15821	Gust Hofner	Butler.	Liquid Force.	Benzoate of soda and saccharin.
15822	Gust Hofner	Butler.	Pop.	Benzoate of soda and saccharin.
15823	Geo. Stout.	Butler.	Ginger Ale.	Benzoate of soda.
15826	Stahl & Straus.	Columbia City.	Cherry.	Saccharin and benzoate of soda.
15827	Stahl & Straus.	Columbia City.	High Ball.	Benzoate of soda and saccharin.
15828	Stahl & Straus.	Columbia City.	Iron Brew.	Benzoate of soda and saccharin.
15829	Stahl & Straus.	Columbia City.	Soda.	Benzoate of soda and saccharin.
15832	Stahl & Straus.	Columbia City.	Orange Cider.	Benzoate of soda and saccharin.
15836	Stahl & Straus.	Columbia City.	Pop.	Benzoate of soda and saccharin.
15838	J. C. Miller.	Milberry.	Pop.	Benzoate of soda.
15910	Fred Waldron	Milberry.	Pop.	Saccharin and benzoate of soda.
15916	Fred Waldron	Milberry.	Pop.	Saccharin and benzoate of soda.
15928	Wm. F. Verfus	Williamport.	Pop.	Benzoate of soda and saccharin.
15930	Wm. F. Verfus	Williamport.	Pop.	Benzoate of soda and saccharin.
15942	Noll & Schneider	Williamport.	Ginger Ale.	Benzoate of soda and saccharin.
15950	Pitcher Bros.	Williamport.	Orangeade.	Benzoate of soda and saccharin.
15982	Jas. Sullivan	Veedersburg.	Pop.	Benzoate of soda and saccharin.
16003	B. F. Conrad	Darlington.	Orangeade.	Benzoate of soda.
16015	Walker Chesterson	Darlington.	Pop.	Colored and not labeled.
16031	Walker Chesterson	Darlington.	Pop.	Colored and not labeled.
16032	Walker Chesterson	Darlington.	Pop.	Saccharin and benzoate.
16033	Walker Chesterson	Darlington.	Pop.	Saccharin.
16034	Walker Chesterson	Darlington.	Pop.	Saccharin.
16060	Dr. J. Cooperider	Madison.	Pop.	Saccharin and benzoate.
16061	Dr. J. Cooperider	Madison.	Soda.	Benzoate of soda.
16062	Dr. J. Cooperider	Madison.	Soda.	Benzoate of soda.
16063-9	Dr. J. Cooperider	Madison.	Soda.	Benzoate of soda.
16065	J. C. Miller	Columbia City.	Apple Cider.	Benzoate of soda.
16096	John Rhoads	Columbia City.	Apple Cider.	Benzoate of soda.
16098	John Rhoads	Columbia City.	Cherry Pop.	Benzoate of soda and saccharin.
16099	Stahl & Straus.	Columbia City.	Soda.	Saccharin and colored.

TEMPERANCE BEERS.

The wide-spread agitation against the sale of malt and intoxicating liquors has resulted in a decreased production of beer and the closing of many breweries. The permanent abandonment of plants in which hundreds of thousands of dollars are invested is too serious a loss to be accepted without some struggle, and so in an attempt to utilize their capital and at the same time to produce a beverage that will satisfy the needs of the thirsty, but dry community, the brewers have developed the manufacture of non-alcoholic beers, dry or temperance beers, as they are commonly known. These beers look like the genuine malt beer and some of them taste like beer, but because of their low alcohol content, and supposedly non-intoxicating qualities, under certain conditions may be sold in dry territory unrestricted by licenses or permits. Some states, however, which have laws prohibiting the sale of malt liquors, whether intoxicating or not, rule against the most innocuous beverages which have a hop flavor and are brewed in whole or in part from malt. Indiana is one of these states and in response to requests from county prosecutors and city officials for assistance in their endeavors to regulate the sale of liquor, we have in the past year had occasion to examine a large number of these non-alcoholic beverages for the purpose of determining, first, their alcohol content, and second, whether or not they are made in whole or in part from malt.

These beverages are most interestingly named. Included in the list we have analyzed is "Quaker Temperance Beer," the alcohol content of which is about 1 per cent.; "Nextobeer," a "Non-Intoxicating Beer;" "White Ribbon," "Non-Alcoholic," "Non-Intoxicating;" "Minnehaha," "A Mild and Healthy Tonic for Temperance People." The name of this beverage suggests the common translation, "Laughing Water," a term usually applied to a far more exhilarating and expensive beverage; "Hop Cream, sold in all Temperance Communities;" "Absolutely Non-Intoxicating Beer." Since this beverage contains fully as much alcohol as ordinary beer it is seriously to be doubted whether the statements on the label are true. Another well-known brand is labelled in part as follows: "Dry Beer Health Beverage, Non-Intoxicating, Refreshing, Nourishing, Relieves Fatigue, Valuable where a Liquid Form of Nutrition is Required; Stimulates the appetite, especially during Convalescence; Is a Tissue Builder, Creates Muscle and Nerve Force." Inasmuch as the alcohol content is but .14 of a per cent., and the total solids content but 6%, the value of this beverage as a tissue builder and a creator of muscle and nerve force is very doubtful.

Still another brand is called "Vigorine," although it contains nothing which is productive of vigor unless it be the small amount of sugar it contains.

One of the most interesting of the products sold in dry territory is "Egyptian Hop and Malt Extract," the label of which states that it is "Intended for Medicinal Purposes, Not as a Beverage." Among other things, the label recommends it as follows: "Consumptives, or those suffering from fevers or other wasting diseases, or those unable to partake of or retain solid foods, derive great benefit from a liberal use of Egyptian Malt Extract." An analysis of the product shows it to be nothing more or less than a dark beer containing over 4% of alcohol.

Several methods are employed in brewing these low alcohol content beers, and every brewing school teaches its own methods or secret formulas. One method largely used consists in dealcoholizing the fermented beer by boiling it, sometimes in vacuo, and then adding to the residue a small percentage of young kraeusen beer and carbonating. Another method is as follows: The wort is so brewed as to have a low gravity and a mash rich in dextrine, which is pitched with a small amount of yeast. As soon as fermentation begins, it is filtered, carbonated and sterilized. Still another method consists in the dilution of ordinary beer wort with water, which is then mixed with ruh or storage beer in such proportions that the finished article does not contain more than one-half of 1% of alcohol. Another method consists in the dilution of ruh or storage beer with water, after which it is filtered, carbonated and sterilized. In addition to these methods, all of which are but variations in the technique of brewing beer, and which produce a malt beverage if malt is used at all in the mash, it is probable that there are some so-called dry beers which are really not beers at all. This product is not brewed, but is made much as pops are made, that is, by adding to a sugar solution hop extract, caramel, flavoring extracts, etc., after which the product is carbonated. No fermentation takes place at any stage of the process if the sugar syrup is properly handled.

Most of these products are somewhat higher in extract than ordinary beers, due probably to the fact that the sugars have not been allowed to undergo fermentation. The phosphoric acid content varies greatly, but in most instances is sufficiently high to indicate the use of some malt in the mash. The degree of fermentation of beers examined by us varies from 0 to 60. The extract of the original wort, if it may be assumed that there ever was an

original wort, varies between 5 and 9%. No preservatives are present and in the case of the samples examined by us, no saccharin was found, although the use of this sugar substitute has been elsewhere reported.

The methods followed in beer analysis are applicable to the analysis of temperance beers, but in order to determine whether or not they contain malt extracts or have been brewed from malt, it is not sufficient to rely upon the determination of the usual factors.

The sugars present in a genuine malt beer are chiefly maltose and the unfermented starch dextrin, and the beer contains very little, if any, dextrose. The glucose beers, on the contrary, are low in maltose and high in dextrose. It is evident, then, that a beer low in maltose and high in dextrin and dextrose is a glucose beer, and on the contrary, that a beer high in maltose and low in dextrose is probably a malt beer, and by taking into consideration the nitrogen, phosphoric acid and extract contents, it is possible to determine with fair accuracy the types of material used in brewing a part malt beer. The analytical difficulties heretofore met with in the estimation of the dextrin, dextrose and maltose content of beers have been so serious that the separation of the sugars has not usually been attempted. We have, therefore, done some work along this line which, while perhaps not entirely new, has never before been attempted exactly after our method.

It is well known that dextrin, dextrose and maltose have different specific rotatory powers, one gram of dextrin in 100 cc. polarizing at 11.6 on the sugar scale, dextrose 3.05, and maltose 8.10. The reducing powers of maltose and dextrose are also different, one gram of dextrose being equivalent to 2.2 grams of cuprous oxid and one gram of maltose to 1.3 grams of cuprous oxid.

It is possible by noting these facts to deduce equations which, when solved, give formulas for dextrose and maltose in terms of the polarization and the copper reduced. These new formulas as suggested by W. D. McAbee, of the laboratory, are as follows:

$$\text{Dextrin} = \frac{P - p}{11.6}$$

$$\text{Dextrose} = \frac{6.23 C - p}{10.6}$$

$$\text{Maltose} = \frac{p - 1.38 C}{6.3}$$

Where—

P = Original Polarization.

p = Polarization due to sugars.

C = Grams Cu₂O reduced by 100cc.

Solutions of known quantities of dextrin, dextrose and maltose were analyzed by the use of these formulas with very accurate results. Samples of standard beer and of a temperance beer, claimed by the manufacturer to be made from glucose, were analyzed with the following results:

	Dextrine.	Dextrose.	Maltose.
Temperance Beer	5.8	2.06	.02
Standard Beer	3.12	.02	1.54

It is, therefore, plain that the decided difference in sugar content between a malt and a non-malt product, when considered in relation to other known factors, is sufficient to identify the product.

TEMPERANCE BEERS.

No.	Brand.	Alcohol.		Extract.		Ash.	Phosphoric Acid.	Specific Gravity @20°C.	Volatile Acids.		Reducing Sugars.	Dextrin.	Polarisation Sugar Scale.		Degree Fermentation.	Original Extract Wort.
		By Wt.	By Vol.	Immer.	Direct Weight.				As C.C.N-10 NaOH.	As Acetic Acid.	Maltose.	Dextrose.	Direct.	Invert.		
40398	Lithia Malt.	1.94	2.07	2.880		113	.026	1.0049		.003	1.23		+20.4	+21.8	53.16	6.17
42099	Beckette.	0.31	0.26	0.610												
42155	Quaker Temp. Beer.	0.09		6.913												
42553	Jingo.	0.43	0.52	3.72												
42668	Wenona.	0.49	0.61													
42718	Hoeter.	1.61	2.04	2.64						.0036					54.9	5.86
42719	Velveten.	trace.		6.93			.0289	@15°C.	6	.0024	3.73		+56.8	+58.5	6.83	6.83
42720	Norton's Nip.	0.07	0.09	5.46			.0351	@23°C.	5	.0030	2.46		+44.0	+45.3	5.60	5.60
42722	Vivo.	1.36	1.71	2.34			.0351		5	.0024	1.14		+19.2	+20.2	61.4	5.06
42724	Tonia.	0.21	0.28	7.064			.0385		4	.0024	3.87		+56.0	+56.3	5.61	7.48
42726	Bock Brew.	0.42	0.52	2.920			.0187		5	.0030	0.66		+5.2	+5.8	22.3	3.76
42746	All Hail.	1.26	1.60	4.351		.090	.0150	@23°C.	1.6	.0066	0.90		+21.0	+20.6	36.7	6.87
42747	Hop Cream.	2.31	2.90	3.143	3.31	.085	.0250		1.6	.0066	3.74		+23.6	+22.0	59.5	7.76
42759	Tonia.	0.42	0.52	4.334		.124	.0187		1.2	.0072	0.60				16.3	5.16
42811	Homo.	0.70	0.90	6.31		.050	.0260		9	.0064	2.67				18.2	7.71
42849	Head.	1.80	2.25	4.70		.088	.0245		1.0	.0060			+39.2	+39.2	43.4	8.30
42859	Hop Cream.	2.85	3.57	3.42		.098	.0323		1.25	.0075			+20.8	+20.4	63.5	9.12
42860	Malt Cream.	2.31	2.90	3.55		.117	.0438		1.0071	.0071			+24.8	+23.1	57.2	8.17
42862	Quaker Temp. Beer.	0.84	1.05	4.27		.070	.0362		1.0151	.0075			+38.8	+38.7	26.2	5.95
42863	Bevo.	0.13	0.15	5.610	6.12	.145	.0090		1.0210	.0048	1.45		+43.6	+42.7	4.34	5.86
42864	Velveten.	0.42	0.52	6.033	6.072	.1672	.0418	Protein	257						12.2	6.87
42865	Dry Beer.	0.25	0.30	6.360	6.617	.1704	.0374		215						7.29	6.86
42866	Homo.	0.00	0.00	5.480	5.466	.1864	.0306		344						7.29	6.86
42867	Dry Beer.	0.25	0.30	6.360	6.617	.1864	.0306		344						7.29	6.86
42868	Expt. Hop and Malt.	3.81	4.75	5.807	5.649	.1916	.0792		581						57.4	13.26
42869	Expt. Hop and Malt.	3.81	4.75	5.807	5.649	.1916	.0792		581						57.4	13.26
42870	Hop Cream.	3.33	4.15	5.681	5.466	.2124	.0770		560						69.1	11.26
42871	Tonia.	0.97	0.10			.1276	.0494		208						1.7	7.99
42872	Tonia.	0.97	0.10			.1276	.0494		208						32.3	8.16
42873	Nextober.	1.32	1.63	7.555	7.856	.1608	.0440		343						4.37	6.85
42874	Tonia.	0.00	0.00	5.526	5.280	.1304	.0440		280						4.05	6.02
42875	Tonia.	0.00	0.00	5.526	5.280	.1304	.0440		280						3.64	6.20
42876	Tonia.	0.14	0.17			.1676	.0462		350						9.59	5.84
42877	Dry Beer.	0.14	0.17			.1676	.0462		350						1.93	7.25
42878	Temperance Beer.	0.11	0.14			.1648	.0366		329							
42879	Temperance Beer.	0.28	0.36			.1360	.0374		183							
42880	Temperance Beer.	0.28	0.36			.1360	.0374		183							
42881	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42882	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42883	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42884	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42885	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42886	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42887	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42888	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42889	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42890	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42891	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42892	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42893	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42894	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42895	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42896	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42897	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42898	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42899	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42900	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42901	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42902	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42903	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42904	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42905	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42906	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42907	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42908	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42909	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42910	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42911	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42912	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42913	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42914	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42915	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42916	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42917	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42918	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42919	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42920	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42921	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42922	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42923	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42924	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42925	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42926	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42927	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42928	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42929	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42930	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42931	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42932	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42933	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42934	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42935	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42936	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42937	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42938	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42939	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42940	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42941	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42942	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42943	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42944	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42945	Temperance Beer.	0.07	0.07			.1432	.0352		204							
42946	Temperance Beer.	0.07	0.07			.1432	.0352		204							
4																

VANILLA EXTRACT.

Of eighteen samples of vanilla extract analyzed, sixteen were pure and two were adulterated. Old goods are still occasionally found on the grocery shelves which are misbranded, but all new goods, so far as the investigations made during the year determine, are of satisfactory strength and are properly labeled.

EXTRACTS—VANILLA—LEGAL.

No.	Manufacturer or Retailer.	Where Collected.	Vanillin.	Total Extract.	Sucrose.	Extract Not Sucrose.	Lead Acetate Precipitate.	Remarks.
12918	Badger & Green.	Greenacole.	0.1068					Pure.
13004	Sent in from.	Terre Haute.	0.2068					Pure.
13192	Winger Bros.	Shoals.	0.027					Labeled & standard strength. Vanilla and Tonka flavor. Properly labeled.
13244	O. W. Peirce Co.	Lafayette.	0.2168					Pure.
13406	Sent in from.	Terre Haute.	0.2512					Pure.
13407	Sent in from.	Terre Haute.	0.2272					Pure.
13408	Sent in from.	Terre Haute.	0.2352					Pure.
13409	Sent in from.	Michigan City.	0.1924					Pure.
13428	Mann & Ketchman	Oterbein.	0.1468					Pure.
13516	Sent in from.	Pt. Wayne.	0.2816	9.69	4.98	3.71		Pure.
13541	Brookmeyer & Son.	Goshen.	0.2232	17.52	8.06	9.46	Heavy	Pure.
13558	Schnull & Co.	Indianapolis.	0.2892	7.78	0.44	7.34	Heavy	Pure.
13564	S. Weeners.	So. Whitley.	0.3232	10.16	4.98	5.18	Heavy	Pure.
13565	H. Glasley.	So. Whitley.	0.1232	9.30	6.47	2.98	Heavy	Pure.
13721	Amos Gipe.	Wabash.	0.1768	14.96	8.53	6.43	Heavy	Pure.
13773	L. A. Jackson.	Indianapolis.	0.3636					Pure.

EXTRACT VANILLA—ILLEGAL.

No. of Sam- ple.	Manufacturer or Retailer.	Where Collected.	Vanillin, Per Cent.	Remarks.
13536	Hall, Whitney Co., Binghamton, N. Y.	Indianapolis.	0.1408	Artificial.
13538	Hall, Whitney Co., Binghamton, N. Y.	Indianapolis.	0.1064	Artificial.

EXTRACTS.

LEMON EXTRACT.

But few samples of lemon extract were analyzed. Of the twenty-one samples sent in seventeen were of legal strength or were properly labelled. Four samples were reported as adulterated. There is still some attempt on the part of manufacturers to put up low-grade extracts under the name of flavors. No difference is, however, allowed in the composition of a lemon extract and a lemon flavor. Both must contain 5 per cent. of lemon oil.

LEMON EXTRACT—LEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Specific Gravity, 20°C.	Alcohol Per Cent by Vol. 20° C.	Color.	Per Cent Lemon Oil by Vol.	Polarization, 200 mm. Tube	Remarks.
42786	Sent in from.	Ft. Wayne.				6.31		Pure.
43187	L. F. Hunseneyer	Washington.				5.50		Pure.
43243	O. W. Pierce Co.	Lafayette.				5.12		Pure.
43318	Hinkley Bros.	Lafayette.				5.93		Pure.
43420	Sent in from.	Ft. Wayne.				5.81		Pure.
43614	J. W. Danhour.	Clay City.	8275	90.0	Natural	4.87	15.6	Labeled "Tr. Lemon Peel."
43616	W. C. Duncan.	Clay City.	9335	48.1	Colored		28.8	Colored but labeled properly.
43774	H. A. Jackson.	Indianapolis.	8532	85.0	Natural.		21.2	Pure.
43956	Bement Ren.	Terre Haute.	8490	83.0	Natural.	6.62		Labeled "Alcohol 85%."
44618	Geo. S. Green.	Aurora.	9327	48.5	Natural.	0.18	0.6	"Lemon Flavor Compound."
44936	M. E. Robbins.	Mishawaka.	8475	83.7	None.	5.93	19.0	Pure.
44937	M. E. Robbins.	Mishawaka.	9510	37.9	Artificial		10.4	"Turpentine Lemon."
44961	H. Hinman.	Swift City.	8437	84.9	None.	5.87	18.8	Pure.
44961	W. R. Anderson.	Lyons.	9383	45.0	None.	0.00	00.0	Labeled properly.
45988	Big Four Pharmacy	Terre Haute.	9513	37.7	Artificial	.00	0.1	Labeled correctly.
45791	Heitman Bros.	Holland.	9412	43.9	None.	18	0.6	Pure.
45792	Heitman Bros.	Holland.	8447	55.1	None.	5.62	18	Pure.

LEMON EXTRACT—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Lemon Oil.	Remarks.
42932	Walsbush Baking Powder Co.	Medaryville.	4.81	Slightly below standard.
43410	Sent in from.	Indianapolis.	0.0	Adulterated.
43537	Paul W. Rutter (Co., Binghamton, N. Y.	Indianapolis.	0.0	Probable naphthal yellow color, adulterated.
43181	W. C. Betts	Washington.	2.96	Below standard.

MISCELLANEOUS EXTRACTS.

The synthetic flavors, such as banana, strawberry, and pineapple, are still occasionally misbranded. Most of these goods are, however, sold as synthetic preparations.

MISCELLANEOUS EXTRACTS—ILLEGAL

Lab. No.	Manufacturer or Retailer.	Where Collected.	Article.	Specific Gravity 20°C.	Alcohol % by Vol. 20° C.	Per Cent. Oil by Vol.	Polarisation 200 mm. Tube	Remarks.
14903	Jerome Bogd.	Brazil	Banana					Not labeled correctly.
14904	Jerome Bogd.	Brazil	Strawberry					Not labeled correctly.
15240	E. R. Dwyer	Hillsdale	Lemon	.9323	37.1		0.2	Artificially colored.
15275	James H. Eaton	Ft. Wayne	Lemon	.9192	45.1	0.59	1.9	Misbranded and below standard.

MISCELLANEOUS FOOD PRODUCTS.

One hundred nineteen samples of miscellaneous food products, including jellies, jams, canned vegetables, honey, olive oil, baking powder, candy, etc., have been analyzed. Of this number sixty were passed as legal, and fifty-nine were adulterated with preservatives, or for some other reason were classed as illegal. Several samples of flour sent in by bakers and consumers were examined to determine whether or not they were bleached. In every instance the samples were found to have been so treated. Under a rule of the State Board of Health, bleaching is prohibited except where the package, sack or barrel is marked "bleached flour."

BAKING POWDER.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Available Carbon Dioxide.	Remarks.
13099	T. H. Bryant.....	Rockville.....	8.42%	Below standard.
13569	P. Van Derweel.....	Knox.....	5.77%	Below standard.
13570	Grosham & Son.....	Knox.....	12.31%	Pure.
13965	Dr. Peyton.....	Jeffersonville.....	9.81%	Below standard.
15583	Wm. Warner.....	Summitville.....	14.14%	Pure.
15992	Wm. Warner.....	Summitville.....	12.87%	Pure.

FLOUR--ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Nitrites.	Remarks.
15114	Anna Wickersham.....	Monticello.....	Present.....	Bleached.
15444	C. G. Carpenter.....	Richmond.....	Present.....	Bleached.
15445	C. G. Carpenter.....	Richmond.....	Trace.....	Bleached.
15446	Wm. Elwamer.....	Indianapolis.....	Trace.....	Bleached.
15462	N. G. Dixon.....	Hinton.....	.....	Bleached.
16052	Jesse Copper.....	Waymansville.....	Meal.....	Worms present.

CANDY.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Name of Article.
14958	W. E. Musser.....	Freedom.....	Chocolate, coated.
14959	J. N. Lucas.....	Freedom.....	Chocolate.
14980	J. N. Lucas.....	Freedom.....	Chocolate.
15110	A. B. Newhunnay.....	Terre Haute.....	Chocolate Drops.
15111	A. B. Newhunnay.....	Terre Haute.....	Cocanut Bonbons.

CANNED VEGETABLES.

No. of Sample.	Article.	Manufacturer.	Where Collected.	Result of Analysis.
13060	Corn.....	Sent in from.....	Indianapolis.....	Pure.
13417	Corn.....	Kokomo Canning Co.....	Kokomo.....	Pure.
13418	Corn.....	Kokomo Canning Co.....	Kokomo.....	Pure.
13066	Corn.....	Sent in from.....	Indianapolis.....	Short weight, adulterated.
13415	Peas.....	Kokomo Canning Co.....	Kokomo.....	Pure.
13416	Peas.....	Kokomo Canning Co.....	Kokomo.....	Pure.
13061	Tomatoes.....	Sent in from.....	Indianapolis.....	Pure.
13413	Tomatoes.....	Kokomo Canning Co.....	Kokomo.....	Pure.
13414	Tomatoes.....	Kokomo Canning Co.....	Kokomo.....	Pure.
13063	Pumpkin.....	Sent in from.....	Indianapolis.....	Pure.
13064	Pumpkin.....	Sent in from.....	Indianapolis.....	Pure.
13067	Pumpkin.....	Sent in from.....	Indianapolis.....	Pure.
13062	Hominy.....	Sent in from.....	Indianapolis.....	Pure.
13065	Hominy.....	Sent in from.....	Indianapolis.....	Pure.
13382	Hominy.....	Sent in from.....	Indianapolis.....	Pure.
13093	Corn.....	.....	Clarks Hill.....	No preservatives.
14044	Corn.....	.....	Chicago.....	No preservatives.
14702	Corn.....	.....	Richmond.....	No preservatives.
14851	Corn.....	.....	South Bend.....	No preservatives.
14853	Corn.....	.....	South Bend.....	No preservatives.
14898	Corn.....	.....	Brazil.....	No preservatives.
15170	Corn.....	.....	Indianapolis.....	No preservatives.
14542	Asparagus.....	.....	Terre Haute.....	No preservatives.
14703	Beans.....	.....	Richmond.....	No preservatives.
14848	Beans.....	.....	South Bend.....	No preservatives.
14850	Beans.....	.....	South Bend.....	No preservatives.
14852	Beans.....	.....	South Bend.....	No preservatives.

HONEY—LEGAL.

No. of Sample.	Manufacturer or Retailer.	Where Collected.	Remarks.
12067	Sent in from.....	Indianapolis.....	Pure.
12068	Sent in from.....	Indianapolis.....	Pure.
12069	Sent in from.....	Indianapolis.....	Pure.
12078	Sent in from.....	Indianapolis.....	Pure.
13036	Sent in from.....	Indianapolis.....	Pure.

OLIVE OIL.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Butyro @20° C.	Specific Gravity @20°C.	Cotton-seed Oil.	Remarks.
13542	Brookmeyer & Son.....	Goshen.....	64.2	.9125	None.	Pure.
13920	Montani & Co.....	Indianapolis.....	70.2	.9137	None.	Pure.
14054	G. A. Austgen.....	Hammond.....	70.2	.9125	Present.	Sold as Salad Oil but not so labeled.

MISCELLANEOUS FOOD PRODUCTS.

Lab. No.	Manufacturer or Retailer.	Where Collected.	Name of Article.	Remarks.
14544	Mooney.....	Terre Haute.....	Peanut Butter.....	Butyro=65.2
14613	J. E. Glouckenous.....	.....	Ice Cream Fluff.....	Starch present.
14859	C. G. Stump.....	Washington.....	Freemom Pickle.....	No Sulphites.
15389	J. T. Thomas.....	La Grange.....	Canning Compound.....	Boric Acid 97.2
15751	E. H. Done.....	Delphi.....	Creamthick.....	Gum Arabic.
15755	H. L. Sharp.....	Delphi.....	Parfait Powder.....	Starch.
14890	W. H. Morris.....	Terre Haute.....	Plum Pudding.....	.....
15763	Delaney.....	Delphi.....	Preservative.....	Powdered Borax.
15806	Crothersville Canning Co.....	Crothersville.....	Hominy.....	.....

FRUIT PRODUCTS.

Twenty-one samples of jellies and jams were analyzed during the year. Twelve of these samples were pure and properly labelled. Nine contained benzoate of soda in amounts varying from .1844 per cent. to .2117 per cent. The average amount of benzoate of soda present was .1950 per cent.

Five samples of apple butter were examined and all contained benzoate of soda, varying in amount from .1066 per cent. to .1584 per cent., the average amount being .1365 per cent. It is worthy of note that all of these samples were mouldy when opened, in spite of the fact that every sample contained more than one-tenth of 1 per cent. of benzoate of soda.

PICKLES.

Eleven samples of sweet cucumber pickles of the Gerkin type were analyzed, all of which contained benzoate of soda. The average benzoate content was .1107 per cent., the maximum amount found being .1440 and the minimum amount .059 per cent. The acidity of the samples as acetic acid ranged from 2.120 per cent. to 3.276 per cent., with an average acidity of 2.603 per cent.

The acidity of five samples of sour pickles varied from 2.53 per cent. to 3.91 per cent., with an average acidity of 3.16 per cent.

MUSTARD.

Sixteen samples of prepared mustard were analyzed to determine the acid content. the minimum acidity as acetic acid was 2.62 per cent. The maximum content as acetic acid was 4.08 per cent. The average acidity of the sixteen samples was 3.85 per cent.

TOMATO CATSUP.

Tomato catsup is best described as the concentrated pulp of tomatoes, to which has been added vinegar, salt, sugar and spices. It varies greatly in composition, according to the desire of the manufacturer to produce a catsup of individuality in taste and consistency. Its quality is regulated by the character of the stock used. Cheap catsups have been made largely from the pulped refuse of the canning factory, consisting for the most part of skins and cores and pieces of tomatoes which are not suitable for use in canning. This pulp when properly treated produces a catsup stock which is well adapted for manufacture into catsup. Much of this

stock is, however, made from unfit raw material, and has been used, together with starch fillers of varying description, for producing very cheap, low-grade goods. These goods have been sold not only in ten-cent bottle packages, but to a considerable amount in bulk to hotels and restaurants and to such trade as could use a large quantity of catsup of inferior quality. It appears to have been the practice of restaurant keepers to procure a lot of standard high-grade goods and when the bottles were empty to refill them with cheap, inferior catsup without, however, destroying the original label. Such a practice is, of course, in violation of the food law and is to be deplored, not only because of that fact, but because of the serious effect it has upon the manufacturer of standard goods whose bottles are used as receptacles for a cheaper product than his house would wish to be sold under its label.

In an attempt to determine by chemical analyses whether or not it was possible to differentiate between brands of catsup, a series of analyses was made of some twenty-four brands of tomato catsup, including both cheap and high-priced goods. The analyses showed a great difference in the composition of the various brands, and proved conclusively the ability of the chemist to determine in the laboratory whether or not goods of one brand had been substituted for another. Perhaps the greatest difference was noted in the amount of total solids present. This figure varied from 9.64 per cent. in one brand to 41.88 per cent. in another brand. The acetic acid content varies greatly according to the idea of the manufacturer as to what strength of acidity produces the best results in flavor. The lowest figure noted was .72 per cent. and the highest 1.92 per cent. Much has been written concerning the high acidity of the so-called non-preserved catsup. In order to determine the truth of this claim, in the tables the brands are arranged according to the presence or absence of benzoate of soda. A comparative study of the tables shows several interesting things. The average solids of the non-preserved goods is 28.33 per cent. and of the goods which contain the preservative, 18.18 per cent. This difference is due, of course, to the greater concentration of the non-preserved goods. The average acid content of the non-benzoated catsup is 1.32 per cent. and of the catsup containing the preservative 1.15 per cent. If, however, the percentage of acidity in each instance is calculated to the total solids it appears that in the non-preserved goods the ratio is as 1 to .056, and in the preserved goods, 1 to .065, thus showing an actual greater acidity in the case of the preserved than in the non-preserved catsup. The average protein content of

the non-preserved goods is 1.97 per cent. and of the preserved goods 1.65 per cent. It is also apparent from the study of the ratio of insoluble to soluble solids that the stock used in the manufacture of the preserved goods more commonly consists of skins and cores than is the case with the non-preserved goods, which are apparently made from the whole tomato.

A large number of determinations of the acidity of different catsups and of the benzoic acid content of preserved goods has been made during the year. The average acidity of twenty-three samples of Blue Label Catsup, made by Curtis Brothers, of Rochester, N. Y., is .82 per cent., and of thirty-three samples of the Waldorf Catsup, made by the Williams Brothers, of Detroit, Mich., 1.05 per cent. The average sodium benzoate content of twenty-three samples of Blue Label Catsup is .1804, and of thirty-three samples of Waldorf Catsup is .2117.

During the year eighty-one samples of catsup have been analyzed, seven of which were reported as free from preservatives, saccharin, starch and other adulterants, and seventy-four samples, or 92.2 per cent., as containing prohibited ingredients and therefore adulterated.

RESULTS OF FOOD ANALYSES, 1909.

ARTICLE EXAMINED.	Number Legal.	Number Illegal.	Total.	Per Cent. of Adulteration.
Baking Powder.....	7	0	7	0.0
Beverages.....	177	175	352	46.7
Butter.....	79	24	103	23.3
Buttermilk.....	2	0	2	0.0
Canned Goods.....	34	6	40	15.0
Catsup.....	7	74	81	92.2
Condensed Milk.....	16	13	29	45.0
Cream.....	44	16	60	26.6
Extract, lemon.....	17	4	21	19.0
Extract, vanilla.....	16	2	18	11.1
Extract, miscellaneous.....	0	4	4	100.0
Fish and oysters.....	1	4	5	80.0
Flour.....	0	5	5	100.0
Honey.....	5	0	5	0.0
Ice cream.....	116	70	186	37.6
Jam and Jelly.....	8	1	9	11.1
Lard.....	35	13	48	27.0
Marie Sugar.....	7	3	10	33.3
Maple Syrup.....	42	14	56	25.0
Meats, prepared.....	48	16	64	25.0
Milk.....	398	83	481	17.2
Miscellaneous.....	17	1	18	55.5
Sausage.....	49	53	102	52.0
Temperance Beer.....	22	0	22	0.0
Vinegar, cider.....	65	46	111	41.4
Vinegar, distilled.....	15	0	15	0.0
Total.....	1,227	627	1,854	33.8

TOMATO CATSUP.

NON-PRESERVED.

Lab. Number.	Manufacturer.	Address.	Brand.	Solids.		Ratio Insoluble to Soluble Solids.	Ash.	Salt.	Total Acids as Acetic.	Protein.	Alkalinity of Ash c.c. N-10 grs.	Sodium Benzoate.	Sucrose.	Ratio Solids to Acid.	Polariscope.		Remarks.
				Total.	Soluble.										Direct.	Invert.	
E 1511	The Jersey Packing Co.	Cincinnati, Ohio.	Manhattan Club.	41.88			5.56	4.48	1.56	1.78	34.80		3.00	1-.037	+19.3	+13.2	Glucose.
E 1329	The Jersey Packing Co.	Cincinnati, Ohio.	Manhattan Club.	37.34			4.53	3.68	1.68	1.89	32.04		5.70	1-.044	+11.7	+8.3	18.1
B 3852	Columbia Conserve Co.	Indianapolis, Ind.	Columbia.	27.44	26.53	0.1	4.39	3.23	1.80	2.08	39.97		19.70	1-.045	+1.7	+3.1	11.1
B 3853	The T. A. Snider Preserve Co.	Cincinnati, Ohio.	Sanders.	31.14	26.28	1.88	1.88	1-.02	3.92	2.41	30.75		14.65	1-.042	+1.0	+2.0	
B 3857	The H. J. Heins Co.	Pittsburg, Pa.	Heins.	31.93	27.60	4.33	1.6	3.35	2.42	1.92	33.48		26.03	1-.042	+3.8	+2.0	
B 3861	E. C. Hazard & Co.	New York, N. Y.	Shrewsbury.	15.64	14.89	0.75	1.7	0.8	3.71	2.43	30.44		18.43	1-.036	+1.0	+2.8	
B 3863	Spague Warner & Co.	Chicago, Ill.	Fendell.	22.32	17.79	4.53	1.28	0.3	3.72	2.43	30.80		16.43	1-.032	+2.0	+2.2	
			Average.	28.33	22.13	1.31	1-14.6	4.17	3.21	1.52	1.97		*16.63	1-.036	.....	.....

PRESERVED.

Lab. Number.	Manufacturer.	Address.	Brand.	Solids.		Ratio Insoluble to Soluble Solids.	Ash.	Salt.	Total Acids as Acetic.	Protein.	Alkalinity of Ash c.c. N-10 grs.	Sodium Benzoate.	Sucrose.	Ratio Solids to Acid.	Polariscope.		Remarks.
				Total.	Soluble.										Direct.	Invert.	
E 1530	Fraser Packing Co.	Elwood, Ind.	Royal Red.	21.00	19.51	1.49	1-13.1	3.84	3.28	96.1	63		12.25	1-.045	+1.2	+4	
D 1048	Berdan & Co.	Toledo, Ohio.	Old Tavern.	15.92	14.53	1.39	1-10.4	3.44	2.73	1.32	1.59		19.63	1-.042	+2.2	+2	
D 1049	M. B. Shelley Mfg Co.	St. Louis, Mo.	Pure Food Law.	12.08	7.88	4.20	1.8	1.77	1.47	84.01	18.47		12.38	1-.039	+1.7	+3.0	
D 1051	The Wauson Canning Co.	Wauson, Ohio.	Lilly.	21.23	20.02	1.21	1-16.5	2.40	1.70	1.32	1.55		19.12	1-.052	+2.0	+3.0	
D 1053	The Williams Bros. Co.	Detroit, Mich.	Waldorf.	17.66	16.56	1.10	1-15.1	3.98	3.24	96.1	27.10		10.20	1-.054	+3.1	+1.8	
D 1054	John A. Tolman & Co.	Chicago, Ill.	Crown.	76.25	69.91	6.35	1-30.4	3.65	2.93	1.32	2.30		3.90	1-.049	+9.3	+8.2	10.4
D 1084	The Jersey Packing Co.	Cincinnati, Ohio.	Sunny Slide.	19.99	19.21	0.78	1-24.6	2.05	1.33	7.21	52.34		07.38	1-.036	+9.1	+8.3	10.2
D 1086	The Greenwood Packing Co.	Greenwood, Ind.	May Day.	9.64	8.22	1.32	6.2	2.20	1.52	96.1	38.47		7.60	1-.059	+2.2	+2.2	
D 1089	McNeil & Higgins Co.	Chicago, Ill.	Comet.	13.10			2.27	1.60	84.1	57.39	47		1.85	1-.064	+3.1	+1.8	
D 1090	Atwood Bros. Co.	Wakerton, Ind.	Superior.	22.70			2.08	1.44	1.20	2.02	49.93		7.60	1-.052	+2.2	+2.2	
B 3951	Red Snapper Sauce Co.	Memphis, Tenn.	Red Snapper.	15.97	11.75	4.22	1-2.8	0.83	3.37	1.20	1.18		5.15	1-.075	+2.2	+2.2	
B 3954	W. D. Huffman Co.	Indianapolis, Ind.	Delmonico.	23.77	21.53	1.94	1-11.2	3.98	2.87	1.56	2.11		15.47	1-.065	+4.3	+3.0	
B 3955	Van Camp Packing Co.	Indianapolis, Ind.	Van Camp's.	18.98	16.86	2.12	1-7.9	3.52	3.11	2.01	52.30		19.11	1-.072	+0.53	+2.2	
B 3956	Cruikshank Bros. Co.	Pittsburg, Pa.	Cruikshank's.	20.07	17.02	3.05	1-5.8	6.42	7.81	1.44	1.97		15.13	1-.051	+1.4	+1.9	
B 3958	Chas. F. London	Cincinnati, Ohio.	Rockaway.	13.91	12.22	1.69	1-7.2	2.59	1.88	96.1	52.27		64.07	1-.069	+3.1	+1.6	
B 3960	Sale-Blackledge-Nellis Co.	Indianapolis, Ind.	Sale.	19.03	18.13	0.90	1-20.1	3.24	2.30	1.32	2.51		11.02	1-.069	+4.2	+3.0	
B 3962	Kothe-Wells-Bauer.	Indianapolis, Ind.	Ko-We-Ba.	17.35	16.34	1.01	1-16.2	3.29	2.36	1.56	1.79		39.44	1-.069	+1.2	+3.0	
			Average.	18.18	16.39	1.81	1-9.1	3.06	2.30	1.15	1.65		*8.51	1-.065	.....	.....

*Glucose catsups not included in sucrose average.

DRUGS.

In Indiana, as in most if not all the states, no specific drug law is to be found upon the statute books except where such legislation may be necessary to control the sale of narcotics. The law regulating the sale of drugs is a part of the act known as the Food and Drug Law, and is administered by the State Food and Drug Commissioner through the Laboratory of Hygiene of the State Board of Health. The law and the method of enforcing it could not be well improved. The State Board of Health is peculiarly adapted for the enforcement of a drug law, for while food adulteration is an economic fraud which rarely works an injury to the health of the consumer, the adulteration of drugs, either by lessening their strength or adding foreign ingredients, places in the hands of the physician an inferior article not adapted to the use for which it is put. And in the proportion that drugs are adulterated the health of the people is endangered.

The standard of purity under the law is that laid down in the U. S. P. or National Formulary, but variation from the standard is allowable when the package containing the drug is plainly labeled as to the true character of the contents. Drugs are held to be misbranded if they are an imitation of or are offered for sale under the name of another article. The opening of packages and the substitution of other drugs differing in quality from those originally present is also a case of misbranding. The law requires that the quantity or proportion of alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, acetanilid, phenacetine, antipyrine or any derivative or preparation of any such substance or substances contained therein shall be plainly stated on the label. When the law was passed in March, 1907, every druggist in the State had on his shelves more or less old goods which were not labeled to conform to this requirement, and in order to relieve the trade from the financial loss sure to follow the condemnation of a considerable portion of its stock, it was provided in the law that the requirement as to the statement of contents should not take effect until March 1, 1908. In the year following the passage of the law the drug inspectors visited nearly every druggist in the State and with him went through his stock of goods, re-labeling and correcting formulas until every package was prop-

erly marked. In addition to this the department issued a bulletin giving the alcoholic and narcotic content of some 2,000 patent and proprietary preparations. When this section of the law took effect the trade, both wholesale and retail, was fully able to meet its requirements, and except in a few minor instances during the year and a half the labeling clause has been operative, no evidence of violation, either willful or through carelessness or ignorance, has been observed. The requirements of the labeling clause do not apply in the case of medicinal prescriptions written by licensed physicians resident in the State of Indiana. If there is any portion of the law which is subject to criticism it is this paragraph. The intent of the proviso is, of course, to allow physicians to prescribe medicines containing alcohol or narcotics, which may be taken without the knowledge of the patient. Unfortunately, both for the legitimate druggist who conforms to the law and the physician who appreciates the ethics of his profession, too many a doctor carries stocks of pharmaceutical preparations which are sold by him when he has prescribed no treatment. He becomes in effect a pharmacist, and yet under present conditions of law enforcement he is not subject as he should be to the same regulations the druggist must observe in the conduct of his business. If it were possible for an inspector to purchase from him a sample of spirits of camphor or tincture of opium the dispensing physician could no doubt be prosecuted for violation of the drug law if he failed properly to label the package, but if such a case were brought to trial he could and probably would establish as a defense the fact that he really had prescribed the treatment and filled the prescription himself.

Since the drug law was enacted and inspectors took the field to enforce it, the percentage of adulteration of drugs has been very markedly diminished. The results of the analysis of hundreds of samples each year show the following percentages of adulterated goods:

1906	62.5%
1907	50.9%
1908	47.7%
1909	33.3%

These figures are very high because in the collection of samples the inspectors have endeavored to select such goods as are most subject to adulteration, but since the figures from 1906 and 1909 represent analyses of the same class of goods, it is gratifying

to note the very great improvement in quality. The explanation of the still unsatisfactory condition is hard to find. In an attempt to determine why certain products have commonly been found below standard, hundreds of inquiries have been addressed to the proprietors of stores where illegal drugs were obtained. In the early days of the law the wholesaler was frequently made to bear the blame, but since the wholesale trade promptly adjusted itself to meet every requirement of the law, such explanations are now but rarely given and still more rarely accepted. After investigating as thoroughly as possible all the conditions which may contribute to impure drugs, it becomes evident that the retail drug trade must observe more care in the preparation of its goods, discard old formulas, buy pharmacopœias of the latest edition and insist upon guarantees of purity from the wholesaler with whom it deals. The purchaser of drugs, whether he be physician or layman, can take cognizance of none of these explanations. He expects to obtain pure and standard goods, and it is the retailer's duty to dispense to him what he requires and pays for.

The sanitary conditions of the drug stores of the State are on the whole satisfactory. Occasionally druggists are found who do not realize as they should the necessity for cleanliness at the prescription counter and the soda fountain. From the very character of its business a drug store is an attractive place. Clean floors, polished counters, shining mirrors and neatly arranged rows of shelf bottles are essentials to a successful business, and since retail druggists are, as a rule, men of high standing in their community, it is an unusual thing for an inspector to find a store operated so carelessly that serious criticism may be made against it.

The soda fountain as an adjunct of the druggist's business has apparently come to stay, and in common with the cigar stand and stock of toilet articles contributes in no small measure to the success of the business. The druggist cannot afford the time to operate his own fountain, nor does he care to do so, and it is the usual custom to install a young man or boy behind the marble counter. The condition of the soda fountains intrusted to the care of these unskilled, careless and heedless clerks must be criticised more severely than any other feature of the druggist's business.

The State Pharmaceutical Association has been one of the strongest advocates for rigid drug laws and thorough inspection

of drug stores, and the success of the drug department of the State Laboratory in correcting abuses and stopping violation of the law is, without doubt, largely attributable to the spirit of co-operation fostered and promoted by the association.

The number of drug samples collected and sent in for analysis during the year was not so great as in 1908 for the reason that the adulteration of these products is decidedly less than heretofore, and is confined chiefly to goods which deteriorate on standing. The druggist is usually fully informed as to the law, and either purchases his stock from reputable wholesale houses which supply him with goods of guaranteed purity, or, if he prepares his tinctures, fluids, extracts, etc., in his own laboratory, he is careful to follow the exact formula laid down in the pharmacopœia. During the year 257 samples of drugs were analyzed, of which 165 were of full strength and 92, or 35.8 per cent., below the legal standard and were classed as adulterated.

TINCTURA ARNICÆ.

Tincture of Arnica.

Thirteen samples of tincture of arnica have been analyzed, of which ten were up to the required standard. Three samples were low in extract content.

TINCTURE OF ARNICA—LEGAL.

Number of Sample.	Retailer.	Where Collected.	Alcohol by Volume. @ 21°C [%]	Solids Per 100 c.c.	Specific Gravity @ 20° C.	Remarks.
13169	W. L. Jackson	Washington	40.7	3.04	.9545	Pure.
13176	Smith & Winton	Washington	45.3	3.40	.9454	Pure.
13189	S. H. Ross	Shoals	45.3	3.98	.9487	Pure.
13202	A. Schreiber & Son	Tell City	46.1	3.15	.9415	Pure.
13202	T. T. Gaesser	Troy	51.2	3.49	.9353	Pure.
13213	H. A. Clark	Cannelton	38.5	2.19	.9523	Pure.
13220	F. M. Rasdale	Grandview	41.7	2.99	.9476	Pure.
13225	T. C. Basye	Rockport	43.7	3.08	.9485	Pure.
13229	J. A. Sargent	Rockport	45.3	3.79	.9465	Pure.
13779	John M. Smith	Washington	43.5	3.10	.9485	Pure.

TINCTURE OF ARNICA—ILLEGAL.

Number of Sample.	Retailer.	Where Collected.	Alcohol by Volume. @ 20°C %	Solids Per 100 c.c.	Specific Gravity @ 20° C.	Remarks.
13162	Boyd & Knox	Paoli	44.8	1.22	.9410	Low extract.
13206	Mrs. Geo. Wagner	Cannelton	48.8	1.12	.9318	Low extract
13218	H. O. Stuteville	Grandview	40.0	1.20	.9456	Low extract

SPIRITUS CAMPHORÆ.

Spirit of Camphor.

During the year seventy-six samples of spirit of camphor were collected and analyzed, of which forty-two contained the requisite amount of camphor gum, and thirty-four, or 80.9 per cent., were below standard. It is apparent that many druggists continue to misinterpret instructions given in the Pharmacopœia, and instead of making up the spirit by dissolving 100 grams of camphor gum in alcohol and making up to a litre, are still dissolving the proper amount of camphor gum in a litre of alcohol, thus producing a spirit which runs about 10 per cent. low in gum content.

SPIRIT OF CAMPHOR—LEGAL.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Specific Gravity @ 20° C.	Alcohol Volume. @ 20° C. %	Alcohol on Label. %	Polarization Reading.	Per Cent. U. S. P.
12785	T. J. Penrod	Bloomington	.8300	82.0			100.8
13098	Jennings & Son	Brookston	.8383	80.1			124.
13161	S. F. Tesford	Paoli	.8365	78.9			115.0
13172	Smith & Winton	Washington	.8278	82.6			111.6
13178	A. F. Schmidt	Washington	.8385	76.9			146.6
13184	A. M. Sum	Washington	.8295	80.8			122.3
13188	L. N. Hunnemeyer	Washington	.8320	80.0			128.3
13190	S. H. Ross	Shoals	.8272	83.0			100.0
13198	A. Schreiber & Son	Tell City	.8297	81.1			106.6
13203	T. T. Gaeuser	Troy	.8530	86.0			130.8
13207	E. F. Cummings	Cannelton	.8320	81.1			105.0
13215	A. P. Gest	Cannelton	.8293	81.1			100.0
13226	T. C. Basye	Rockport	.8337	80.0			101.6
13230	J. A. Sargent	Rockport	.8300	81.8			101.6
13293	Brown's Pharmacy	Lagrange	.8307	81.1			105.0
13294	J. F. Thomas	Lagrange	.8287	81.8			101.6
13320	C. F. Miller	Wolcottville	.8280	83.0			100.0
13322	Ernest Cutler	Wolcottville	.8317	80.8			116.6
13326	Jas. D. Snyder	Kendallville	.8365	76.9			133.3
13336	O. P. Raber	Kendallville	.8312	80.0			114.1
13429	Davis & Rondelbush	Colfax	.8303	81.5			114.1
13430	W. H. Coon	Colfax	.8328	81.8			110.0
13331	A. R. Otis	Kendallville	.8313	83.0			105.0
13581	H. R. Koffel	Knox	.8310	81.4	86.0	12.1	100.8
13682	Bowman & Watson	Gary	.8410	79.2	86.0	14.1	116.6
13808	Geddes & Harding	Butler	.8347	81.4		14.9	124.1
14076	B. F. Fendig	Rensselaer	.8362	81.8		15.3	126.6
14079	A. F. Long	Rensselaer	.8317	82.9		13.3	110.8
14081	J. A. Litch	Rensselaer	.8340	81.4		12.0	100.0
14506	Taylor & Roth	Edinburgh	.8283	84.0		13.0	108.3
14515	C. H. Drybread	Franklin	.8307	83.6		13.1	109.1
14521	Agnes Drug Co	Converse	.8352	81.1		15.1	124.8
14523	Laum & Gift		.8283	80.4	86.0	12.8	106.6
14830	Schiffer & Co.	Mishawaka	.8338	79.6	86.0	13.5	112.5
14931	Wm. H. Reeves	Freedom	.8376	91.1		17.5	146.8
14981	O. C. Bastin	South Bend	.8307	79.3	86.0	12.8	106.6
14985	Nicholas Schilling	South Bend	.8433	74.5	86.0	21.6	180.0
15001	V. Niedbalski	South Bend	.8722	65.4	86.0	13.3	110.0
15016	Meyer Drug Store	South Bend	.8325	78.9	90.0	12.0	100.
16080	Chas. Coonley & Co.	South Bend				12.0	100.0

SPIRIT OF CAMPHOR—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Specific Gravity @ 20° C.	Alcohol Volume @ 20° C. %	Alcohol on Label %	Polarization Reading.	Per Cent. U. S. P.
13077	Arthur E. Nickel.	Chesterton.	.9230	60.8			47.7
13084	J. T. Brunnough.	New Ross.	.8254	62.5			84.4
13085	J. H. Kneale.	Brookston.	.8381	87.5			83.3
13088	J. W. Milligan.	Clarks Hill.	.8278	41.6			84.4
13092	J. M. Myers.	Jamestown.	.8267	90.0			84.4
13167	H. J. Lindeman.	Washington.	.8306	84.1			81.1
13180	W. C. Betts.	Washington.	.8307	95.8			80.8
13205	Mrs. G. R. Wagner.	Cannelton.	.8723	88.3			66.8
13233	A. H. Miller, Jr.	Huntingburg.	.8292	94.1			81.1
13273	A. R. York.	Cloverdale.	.8252	80.8			83.7
13323	Henry Fisher.	Kendallville.	.8840	73.3			62.2
13333	P. G. Klinkenberg.	Kendallville.	.8285	93.3			80.8
13662	Dr. B. E. Miller.	Albion.	.8986	34.1			63.3
13672	H. D. Stone.	Albion.	.8235	40.0			85.5
13170	W. L. Jackson.	Washington.	.8210	42.5			84.8
13582	F. A. Green.	Knox.	.8305	81.8	86.	10.5	87.5
13629	Marshall Casper.	Winamac.	.8283	85.5	86.	10.0	83.3
13634	Smith's Drug Store.	Winamac.	.8448	77.3	86.	8.6	71.6
13669	M. Q. Beck.	Albion.	.8312	83.6	86.	10.9	90.8
13677	Hall's Pharmacy.	Gary.	.8340	80.8	86.	11.7	97.5
13678	Brennan.	Gary.	.8270	83.6		9.3	77.5
13681	Gary Pharmacy.	Gary.	.8415	78.1	86.	8.8	73.3
13805	Stone's Drug Store.	Butler.	.8307	84.0		11.4	95.0
13996	W. F. Peters.	Madison.	.8270	85.1		8.4	70.0
14018	Gibson & Reidel.	Madison.	.8297	84.7		11.7	97.5
14020	J. E. Harper Co.	Madison.	.8310	84.4		11.7	97.5
14024	H. Rogers.	Madison.	.8323	83.6		11.5	95.8
14500	C. E. Creelius.	New Albany.	.8225	86.6		4.5	37.5
14537	Dr. Rush.	Owensburg.	.9260	43.5		4.1	34.1
14669	Chas. Coonley.	South Bend.	.8300	81.1	85.	11.3	94.1
14978	Wood & Striebler.	South Bend.	.8290	79.3	93.	9.4	78.3
14980	W. M. Patterson.	South Bend.	.8295	80.0	86.	11.0	91.6
14997	Central Pharmacy.	South Bend.	.8392	80.4	86.	11.1	92.5
15007	H. E. Frechoffer.	South Bend.	.8692	67.5	86.	10.8	90.0
15012	White's Pharmacy.	South Bend.	.8350	78.9		10.9	90.8
15664	White's Pharmacy.	South Bend.	.8357			10.6	88.3

TINCTURA FERRI CHLORIDI.

Tincture of Iron.

The tincture of iron is of much better quality than formerly. Occasionally samples run somewhat low in iron content. During the year sixteen samples were analyzed, of which twelve were pure and four adulterated.

TINCTURE OF IRON—LEGAL.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Specific Gravity @ 20° C.	Alcohol Volume @ 20° C. %	Alcohol on Label %	Per Cent. Fe.	Per Cent. U. S. P.
13157	J. P. Riley.	Paoli.	.9767	65.1	62.0		100.0
13463	T. W. Hollenbeck.	Indianapolis.	.9940	60.7	62.0	4.55	100.0
13468	Millikan Pharmacy.	Indianapolis.	1.0075	54.4	62.0	4.55	100.0
13472	T. H. Carter.	Indianapolis.	1.0130	57.3	62.0	4.97	108.6
13476	Waddell & Walterhouse.	Indianapolis.	1.0097	58.1	62.0	4.65	101.5
13479	W. H. Burget.	Indianapolis.	1.0075	56.2	70.0	4.77	104.3
13485	Schwankhous.	Indianapolis.	1.0366	49.5	62.0	4.95	108.1
13488	J. M. Scott.	Indianapolis.	1.0191	55.1	62.0	4.90	107.0
13490	L. A. Gable.	Indianapolis.	.9927	58.4	62.0	4.575	100.9
13492	F. Erdelmeyer.	Indianapolis.	1.0154	55.8	62.0	4.85	105.0
13494	B. Muhl.	Indianapolis.	1.0082	56.6		4.575	100.0
13497	Pfaffins.	Indianapolis.	1.0186	54.7		4.975	108.6

TINCTURE OF IRON—ILLEGAL

13069	G. G. Graham.....	Veedersburg.....	1.0211	46.6	62.0	4.05	88.4
13465	James Mead.....	Indianapolis.....	.9432	68.2	62.0	3.20	69.8
13481	H. O. Atchison.....	Indianapolis.....	.9638	59.6	62.0	4.40	96.1
13483	L. S. Stockman.....	Indianapolis.....	.9810	63.3	62.0	4.15	90.6

LIQUOR CALCIS.

Lime Water.

Lime water still occasionally falls below standard, although the percentage of adulteration is far lower than formerly. Of the fourteen samples analyzed during the year, twelve were pure and two adulterated.

LIME WATER—LEGAL.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Per Cent. U. S. P.
13918	Henry Tepe.....	Evansville.....	109.4
14017	Gibson & Reidel.....	Madison.....	120.0
14021	Harper & Co.....	.....	116.8
14973	Coonley & Co.....	South Bend.....	120.0
14977	Wood & Striebler.....	South Bend.....	115.7
14982	O. C. Bastion.....	South Bend.....	122.1
14988	N. Schilling.....	South Bend.....	117.8
14993	Wm. Patterson.....	South Bend.....	117.8
14998	Central Pharmacy.....	South Bend.....	117.8
15008	H. E. Freehafer.....	South Bend.....	123.1
15013	White's Pharmacy.....	South Bend.....	103.1
15017	M. M. Meyer.....	South Bend.....	115.2

LIME WATER—ILLEGAL.

14025	W. H. Rogles.....	Madison.....	9.4
15003	V. Niedbalski.....	South Bend.....	68.4

TINCTURA IODI.

Tincture of Iodine.

This tincture is still frequently low in iodine content. Occasionally samples are so deficient as to suggest that they were purposely so made, but since the amount used is usually but little below the required quantity, it is probable that the adulteration is due more to carelessness in preparation than to willful violation. During the year sixty-nine samples were analyzed, of which thirty-four were pure and thirty-five adulterated.

TINCTURE OF IODINE—LEGAL.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Grams Iodine Per 100 c.c.	Per Cent. U. S. P.
12839	E. E. Douglass	Hillsdale		104.9
13159	J. P. Riley	Paoli		104.9
13185	A. M. Sum	Washington		108.6
13201	T. T. Gaeaser	Troy		100.0
13210	H. A. Clark	Cannelton		100.0
13224	T. C. Bayne	Rockport		108.6
13234	A. H. Miller, Jr.	Huntingburg		100.0
13292	Brown's Pharmacy	Lagrange		100.9
13294	J. F. Thomas	Lagrange		105.3
13319	C. F. Miller	Wolcottville		101.3
13321	Ernest Cutler	Wolcottville		100.0
13431	Hanna Drug Co.	Ladoga		100.2
13423	A. C. Schoenfeld	Otterbein		109.1
13580	H. R. Koffel	Knox		106.2
13631	M. Carper	Winamac		106.2
13674	H. D. Stone	Albion	7.15	104.3
13804	Stone's Drug Store	Butler	7.20	105.0
14019	Gibson & Reifel	Madison		100.5
14022	J. E. Harper Co.	Madison		153.7
14223	W. H. Rogers	Madison		101.6
14028	Shore & Wilson	Rochester	7.15	104.3
14080	J. A. Larsh	Rensselaer		101.6
14725	Owl Drug Store	Bedford	6.82	99.41
14736	Dodd & Douthitt	Bedford	7.14	104.07
14780	A. F. Long	Rensselaer	7.59	110.64
14890	Simon Herr	Brasil	7.40	109.17
14970	Chas. Coonley & Co.	South Bend	7.31	106.57
14974	Wood & Striebler	South Bend	7.11	103.70
14979	Otto C. Bastion	South Bend	7.05	102.82
14994	Central Pharmacy	South Bend	7.17	104.59
14990	V. Nirdalski	South Bend	8.17	119.09
15004	H. E. Freshaffer	South Bend	6.98	101.83
15006	White's Pharmacy	South Bend	6.83	99.63
15014	Meyer Drug Store	South Bend	7.15	104.22

TINCTURE OF IODINE—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Grams Iodine Per 100 c.c.	Per Cent. U. S. P.
13078	Arthur E. Nickel	Chesterton		71.1
13166	H. J. Lindeman	Washington		92.8
13176	A. F. Schmidt	Washington		89.9
13179	W. C. Betts	Washington		77.1
13191	A. H. Row	Shoals		88.8
13195	G. S. Gush	Tell City		73.0
13199	A. Schrieber & Son	Tell City		77.1
13219	F. M. Ragdale	Grandview		65.3
13228	J. A. Sargent	Rockport		75.9
13306	Ballou & Antonide	Lagrange		91.4
13325	Henry Fisher	Kendallville		66.1
13337	J. D. Snyder	Kendallville		81.5
13339	A. R. Otis	Kendallville		75.9
13334	P. G. Kligenberg	Kendallville		95.0
13402	Sent in from	Kendallville		77.1
13567	Sent in from	Peru		58.6
13583	Frank A. Green	Knox		94.5
13635	Smith Drug Store	Winamac		77.5
13664	B. E. Miller	Albion	6.04	92.5
13668	M. C. Beck	Albion	6.85	92.5
13809	C. F. Miller	Butler	5.64	82.0
14040	S. M. Newby	Rochester	5.86	85.6
14077	B. F. Fendig	Rensselaer	1.81	26.4
14078	A. F. Long	Rensselaer	4.70	68.6
14514	Muts & Lynch	Edinburg	6.70	97.6
14522	Agness Drug Co.	Converse	6.63	96.5
14524	Laun & Gift	Converse	6.01	77.7
14732	Dodd & Douthitt	Bedford	3.04	47.19
14900	Laun & Gift	Converse	6.72	97.01
14831	Schiffer & Co.	Mishawaka	6.16	89.67
14964	N. Schilling	South Bend	6.05	88.18
14989	W. M. Patterson	South Bend	6.65	96.88
15223	H. V. Stark	Shelburn	6.13	89.36
15283	Arch Yazel	Elmora	3.57	52.12
15612	Wirt Cummins	Hymers	6.57	92.84

TINCTURA MYRRHÆ.

Tincture of Myrrh.

Fourteen samples were collected and analyzed during the year, all of which were pure. This tincture apparently is not subject to adulteration.

TINCTURE OF MYRRH.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Specific Gravity 20° C.	Alcohol Volume. @ 20° C. %	Alcohol on Label. %	Grams Extract per 100 c.c.	Grams Ash per 100 c.c.
13090	E. M. Henderson.	Brownsburg.	.8342		None.	5.213	.015
13462	I. W. Hollenbeck.	Indianapolis.	.8475	82.9	95.0	6.431	.015
13466	Jas. Mead.	Indianapolis.	.8387	83.1	90.0	4.673	.018
13467	Millikan Pharmacy.	Indianapolis.	.8425	83.1	None.	5.542	.058
13470	J. C. Clark.	Indianapolis.	.8345	85.0	90.0	4.867	.018
13473	T. H. Carter.	Indianapolis.	.8282	87.3	90.0	3.050	.013
13475	Waddell & Walterhouse.	Indianapolis.	.8287	87.3	90.0	3.556	.008
13478	W. H. Burget.	Indianapolis.	.8380	82.2	90.0	3.878	.015
13486	H. Schwankhous.	Indianapolis.	.8315	85.6	None.	4.083	.012
13487	J. M. Scott & Son.	Indianapolis.	.8374	83.1	95.0	6.059	.016
13489	L. A. Gable.	Indianapolis.	.8513	79.0	90.0	6.845	.062
13493	F. Erdelmeyer.	Indianapolis.	.8412	83.8	90.0	6.025	.009
13495	S. Muhl.	Indianapolis.	.8395	84.5	None.	5.593	.008
13498	Pfaffins.	Indianapolis.	.8406	83.6	90.0	6.059	.001

TINCTURA OPII CAMPHORATA.

Paregoric.

Nearly all the samples of paregoric analyzed were found to be of standard quality. Occasionally samples come to the laboratory which do not properly show the alcohol or opium content. Such goods are mislabeled and are classed as adulterated.

PAREGORIC—LEGAL.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Specific Gravity 20° C.	Alcohol Volume. @ 20° C. %	Alcohol on Label. %	Grains Opium per fl. oz. on Label.
13097	G. E. Galloway.	Cambridge City.	.9414			
13163	Boyd & Knox.	Paoli.		42.6		
13168	W. L. Jackson.	Washington.	.9421	45.3		
13174	Smith & Winton.	Washington.	.9502	42.0		
13204	Mrs. Geo. R. Wagner.	Cannelton.	.9376	45.9		
13208	E. F. Cummings.	Cannelton.	.9447	43.5		
13221	F. M. Ragdale.	Grandview.	.9107	58.4		
13324	Henry Fisher.	Kendallville.	.9494	41.7		
13328	Jas. D. Snyder.	Kendallville.	.9451	38.9		
13332	P. G. Klinkenberg.	Kendallville.	.9499	42.0		
13456	A. K. Hoover.	New Albany.	.9443	44.1		
13515	Nye & Boor.	Crawfordsville.	.9502			
13665	B. E. Miller.	Albion.	.9452	40.5	None.	None.
13666	W. C. Beck.	Albion.	.9516	40.9	46.5	1.9
13678	H. D. Stooe.	Albion.	.9434	44.1	46.5	1.9
13676	Hall's Pharmacy.	Gary.	.9573	36.3	None.	None.
13679	Brennan & Stringfellow.	City.	.9450	42.0	None.	None.
13680	Gary Pharmacy.	Gary.	.9497	40.9	46.5	1.9
13683	Borman & Watson.	Gary.	.9513	39.8	46.5	1.9
14029	Shore & Wilson.	Rochester.	.9515	38.7	44.0	1.4
14041	S. M. Newby.	Rochester.	.9529	39.3	46.5	1.9

PAREGORIC—ILLEGAL.

13098	Dean House.	Cambridge City.	.9492			
13330	A. R. Otis.	Kendallville.	.9474	42.8		
13337	O. F. Raber.	Kendallville.	.8941	70.4		

SPIRITUS AMMONIÆ AROMATICUS.

Aromatic Spirit of Ammonia.

Ten samples were collected and analyzed, all of which were pure.

AROMATIC SPIRITS OF AMMONIA—LEGAL.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Specific Gravity @ 20°C.	Alcohol Volume. @ 20°C. %	Alcohol on Label. %	Polarization 200 m.m. Tube.	Color.
13216	Henry Tepe	Evansville	.8975	61.1	66.4	+ 3.2	
14972	C. Coonley & Co.	South Bend	.8967		66.0	+ 3.1	Colorless.
14975	Wood & Striebler	South Bend	.9185	52.4	70.0	+ 2.2	Colorless.
14987	Nicholas Schilling	South Bend	.9057	59.3	66.4	+ 1.3	Sl. Brown.
14992	Wm. M. Patterson	South Bend	.8970	62.3	64.6	+ 3.3	Sl. Brown.
14996	Central Pharmacy	South Bend	.9003	56.2		+ 2.8	Brown
15002	V. Niedbalski	South Bend	.8940	62.9		+ 3.4	Yellow.
15006	H. E. Freshaffer	South Bend	.9015	61.1	70.0	+ 3.5	Very Yellow.
15011	White's Pharmacy	South Bend	.9070	56.1		+ 2.0	low.
							Brownish.
15018	M. M. Meyer	South Bend	.9030	57.7	70.0	+ 3.0	Very Yellow.
							low.
							Brown.
							Colorless.

TINCTURA CAPSICI.

Tincture of Capsicum.

Of the ten samples analyzed, eight were pure and two were classed as adulterated because of the low alcohol content and an insufficient amount of extract.

TINCTURE OF CAPSICUM—LEGAL.

No. of Sample.	Retailer.	Where Collected.	Specific Gravity. @ 20°C.	Grams Extract Per 100 c.c.	Alcohol by Volume @ 20°C. %	Remarks.
13165	H. J. Lindeman	Washington	.8332	1.42	84.5	Pure.
13173	Smith & Winton	Washington	.8443	2.15	81.8	Pure.
13177	A. F. Schmidt	Washington	.8382	2.01	83.0	Pure.
13182	W. C. Betts	Washington	.8393	2.56	81.8	Pure.
13231	J. A. Sargent	Rockport	.8403	2.17	82.5	Pure.
13232	A. H. Miller, Jr.	Huntingburg	.8310	1.91	85.1	Pure.
13667	M. C. Beck	Albion	.8547	2.33	77.6	Pure.
13671	H. D. Stone	Albion	.8477	1.435	81.6	Pure.

TINCTURE OF CAPSICUM—ILLEGAL.

13636	Smith Drug Store	Winamac	.8798	2.485	69.8	Low alcohol.
13663	B. E. Miller	Albion	.8997	0.792	59.4	Very poor quality.

TINCTURA OPII.

Tincture of Opium.

Of the four samples of laudanum analyzed, but one was of proper strength, three containing less than the required amount of morphine.

TINCTURE OF OPIUM—LEGAL.

Number of Sample.	Retailer.	Where Collected.	Grams Morphine Per 100 c.c.	Per Cent. U. S. P. Strength.	Remarks.
12274	E. H. Wilson	Indianapolis	1.2518	100.0	Pure.

TINCTURE OF OPIUM—ILLEGAL.

12339	E. E. Douglass	Hillsdale	1.0654		Below standard.
13212	E. F. Cummings	Cannelton	1.1522		Below standard.
13113	Sent in from	Kendallville	0.6872		Below standard.

MISCELLANEOUS DRUGS.

Seven samples of miscellaneous drugs, such as aqua ammonia, opium, salve, snuff, linseed oil, alcohol, etc., were examined during the year, of which six were adulterated.

AMMONIA WATER.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Per Cent. Ammonia by U. S. P. Method.	Specific Gravity 25°C.	Remarks.
14781	A. F. Long	Rensselaer	8.19	.9654	Below standard.
15287	Chas. Mason	Duggar	8.97	.9635	Below standard.
15610	McKissick Drug Co.	Hymers	6.66	.9720	Below standard.

DRUGS—MISCELLANEOUS.

Lab. No.	Manufacturer or Retailer.	Place of Collection.	Articles Examined.	Remarks.
13782	Jas. M. Dinnen	Ft. Wayne	Snuff	Cocaine 4.93%.
13873	Brought in by Zigeler & Co.	Huntington	Linseed Oil	Oil, adulterated.
15029	Dr. W. E. Schweir	Knox	Alcohol	No metallic poison.
15637	Mrs. E. Douglass	Greensburg	Opium Salve	Arsenic detected.

RESULTS OF DRUG ANALYSES, 1909.

Article Examined.	Number Legal.	Number Illegal.	Total.	% Adulterated.
Lime water.....	12	2	14	14.3
Miscellaneous drugs.....	1	6	7	75.
Paregoric.....	21	3	24	12.5
Spirit of ammonia.....	10	0	10	0.0
Spirit of camphor.....	42	34	76	44.7
Tincture of arnica.....	10	3	13	23.0
Tincture of capsicum.....	8	2	10	20.0
Tincture of iodine.....	34	35	69	50.7
Tincture of iron.....	12	4	16	25.
Tincture of myrrh.....	14	0	14	0.0
Tincture of opium.....	1	3	4	75.
Total.....	165	92	257	35.8

PROSECUTIONS.

Fewer dealers have been prosecuted for violation of the pure food and drug law than during 1907 or 1908, but the cases brought and won have been more bitterly defended than during the first two years the law was in operation. During the year 133 cases were filed against the dealers who sold food products containing preservatives or artificial sweeteners, or which were otherwise adulterated in violation of the law and against proprietors of unsanitary restaurants, grocery stores, slaughter houses, meat markets and dairies. Out of the entire number of cases filed and tried, but one defendant was acquitted. The fines assessed amount to \$1,420.00. Dealers who sell adulterated goods or who maintain their places in an unsanitary condition cannot hope for leniency in our courts. Rigid compliance with the provisions of the pure food laws is so important to the welfare of the community that the dealer who violates the law, either innocently or willfully, must take the consequences of his action. The following table summarizes the reasons for which prosecutions were brought and shows the number of cases won in each class:

LIST OF PROSECUTIONS BROUGHT UNDER THE FOOD AND DRUG LAW, OCTOBER 1908—OCTOBER 1909.

COUNTY.	Lab. No.	Name and Address of Defendant.	Why Prosecuted.	Date of Trial.	Disposition of Case.
Boont	XXXX	Nathan Green, Lebanon	Uncovered confectionery.	Mar. 17, 1909	Fined \$10 and costs.
Carroll	15752	Harry L. Sharp, Delphi	Selling ice cream below standard.	Sept. 15, 1909	Fined \$10 and costs.
Cass	15750	Delphi Ice Cream Co., Delphi	Selling ice cream below standard.	Sept. 15, 1909	Fined \$10 and costs.
Cass	XXXX	David Powlan, Logansport	Unsanitary slaughter house.	Mar. 6, 1909	Fined \$10 and costs.
Cass	XXXX	Abie Stern, Logansport	Unsanitary slaughter house.	Mar. 5, 1909	Fined \$10 and costs.
Cass	15098	W. R. Cogley, Logansport	Selling milk below standard.	June 16, 1909	Fined \$10 and costs.
Clark	15094	John H. Hile, Logansport	Selling milk below standard.	June 12, 1909	Fined \$10 and costs.
Clark	14784	John E. Worrell, Jeffersville	Selling watered milk.	May 15, 1909	Fined \$10 and costs.
Clark	14786	Herman Becker, Jeffersville	Selling watered milk.	May 21, 1909	Fined \$10 and costs.
Clark	14792	John Stender, Jeffersville	Selling skimmed milk.	May 21, 1909	Fined \$25 and costs.
Clark	---	John B. Roberts, Brazil	Unsanitary market.	Nov. 17, 1908	Fined \$10 and costs.
Clinton	---	Jacob G. West, Brazil	Uncovered bread on street.	Nov. 18, 1908	Fined \$10 and costs.
Clinton	15710	Fred Waldron, Mulberry	Overgrade containing saccharin.	Sept. 14, 1909	Fined \$10 and costs.
Clinton	15716	Fred Waldron, Mulberry	Pop containing saccharin and benzoate.	Sept. 14, 1909	Fined \$10 and costs.
Davess	15283	Arch. Yazel, Elletts	Tr. iodine below standard.	Nov. 19, 1908	Fined \$10 and costs.
Delaware	---	M. L. Trent, Muncie	Exposed candy.	Nov. 21, 1909	Fined \$10 and costs.
Delaware	15546	M. F. Maurer, Muncie	Ronbro, containing saccharin.	July 22, 1909	Fined \$10 and costs.
Delaware	15548	Star Bottling Works, Muncie	Brech beer containing saccharin.	Jan. 22, 1909	Fined \$10 and costs.
Elkhart	11525	E. C. Brookmeyer, Goshen	Selling skimmed milk.	Jan. 22, 1909	Fined \$10 and costs.
Floyd	---	Reuben Ingram, Greenville	Unsanitary slaughter house.	May 13, 1909	Fined \$10 and costs.
Floyd	---	John S. Payne, New Albany	Milk containing slaugher water.	July 26, 1909	Fined \$10 and costs.
Fulton	14764	L. P. Conner, Rochester	Selling adulterated hamburger steak.	Mar. 30, 1909	Fined \$10 and costs.
Greene	13928	John D. Landis, Linton	Unsanitary grocery store.	May 14, 1909	Fined \$25 and costs.
Greene	---	D. B. Rush, Owensburg	Unsanitary grocery store.	Mar. 26, 1909	Fined \$10 and costs.
Greene	---	Quince Ferguson, Owensburg	Unsanitary grocery store.	Mar. 26, 1909	Fined \$10 and costs.
Greene	---	Worthington Ice Cream Co.	Selling ice cream below standard.	July 8, 1909	Fined \$10 and costs.
Howard	15389	J. F. Bergman, Kokomo	Selling soda containing saccharin.	July 14, 1909	Fined \$10 and costs.
Howard	15390	J. F. Bergman, Kokomo	Selling soda containing saccharin.	July 14, 1909	Fined \$10 and costs.
Howard	15572	Sig Frank, Kokomo	Selling cider containing saccharin.	July 15, 1909	Fined \$10 and costs.
Jackson	15094	Edwin C. Blumer, Seymour	Ice cream below standard.	June 16, 1909	Fined \$10 and costs.
Jasper	12806	J. A. Lash, Rensselaer	Unsanitary slaughter house.	June 16, 1909	Fined \$10 and costs.
Jasper	12811	A. F. Long, Rensselaer	Selling ammonia below standard.	April 26, 1909	Fined \$10 and costs.
Knox	15410	Thuis Bottling Works, Vincennes	Selling soda containing saccharin.	July 22, 1910	Fined \$10 and costs.
Knox	15225	Thuis Bottling Works, Vincennes	Selling soda containing saccharin.	July 22, 1909	Fined \$10 and costs.
Knox	15422	Recker Bottling Works, Vincennes	Selling soda containing saccharin.	July 29, 1909	Fined \$10 and costs.
Knox	15423	Recker Bottling Works, Vincennes	Selling soda containing saccharin.	July 29, 1909	Fined \$10 and costs.
Knox	---	Mary Duessler, Vincennes	Ice cream below standard.	July 22, 1909	Fined \$10 and costs.
Knox	---	Wm. Richter, Vincennes	Selling soda pop containing saccharin.	July 22, 1909	Fined \$10 and costs.
Knox	---	Leon Store, Hammond	Selling milk keep (formaldehyde)	July 2, 1909	Fined \$10 and costs.
Lake	---	Theo. Heiney, Tolleston	Unsanitary bakery.	Sept. 12, 1909	Fined \$10 and costs.
Lake	13711	Theo. Heiney, Tolleston	Milk.	Mar. 12, 1909	Fined \$10 and costs.

LIST OF PROSECUTIONS—Continued.

COUNTY.	Lab. No.	Name and Address of Defendant.	Why Prosecuted.	Date of Trial.	Disposition of Case.
La Porte	11412	John S. Minnich, La Porte	Colored distilled vinegar	Nov. 11, 1908	Fined \$10 and costs.
Lawrence	15212	Dodd and Doughty, Bedford	Selling indulin below standard	Nov. 11, 1908	Fined \$10 and costs.
Lawrence	15406	Walter Smith, Mitchell	Selling Widow High-ball saccharin	Aug. 13, 1909	Fined \$10 and costs.
Lawrence	15407	Walter Smith, Mitchell	Selling pop containing saccharin	July 13, 1909	Fined \$10 and costs.
Lawrence	14729	J. M. Miller, Bedford	Selling ice cream below standard	May 21, 1909	Fined \$10 and costs.
Lawrence	14731	C. F. Whitlow, Mitchell	Selling ice cream below standard	May 21, 1909	Fined \$10 and costs.
Lawrence	14743	C. F. Whitlow, Mitchell	Selling ice cream below standard	May 21, 1909	Fined \$10 and costs.
Lawrence	15088	Mary D. Seal, Bedford	Selling ice cream below standard	May 21, 1909	Fined \$10 and costs.
Lawrence	15089	James Cobb, Indianapolis	Selling ice cream below standard	May 22, 1909	Fined \$10 and costs.
Marion	13844	Frank Schaefer, Indianapolis	Selling adulterated lard	May 13, 1909	Fined \$10 and costs.
Marion	13875	Frank Schaefer, Indianapolis	Selling adulterated lard	May 13, 1909	Fined \$10 and costs.
Marion	—	S. E. Wollenmider, Indianapolis	Selling adulterated lard	April 13, 1909	Fined \$10 and costs.
Marion	—	W. E. Sawyer, Indianapolis	Selling adulterated lard	April 13, 1909	Fined \$10 and costs.
Marion	—	W. E. Scott, Indianapolis	Selling sausage containing sulphites	April 16, 1909	Fined \$10 and costs.
Marion	—	Hammond & Paquette, Indianapolis	Selling adulterated lard	April 16, 1909	Fined \$10 and costs.
Marion	—	La Farge, Indianapolis	Adulterated hamburger	April 16, 1909	Fined \$10 and costs.
Marion	—	Mrs. T. J. Kean, Indianapolis	Adulterated hamburger	April 16, 1909	Fined \$10 and costs.
Marion	—	Geo. Snowder, Indianapolis	Watered oysters	April 23, 1909	Fined \$10 and costs.
Marion	—	Wm. Mayer, Indianapolis	Watered oysters	June 4, 1909	Fined \$10 and costs.
Marion	15126	Amrose Andrews, Indianapolis	Selling milk below standard	June 4, 1909	Fined \$10 and costs.
Marion	15130	Henry Armholders, Indianapolis	Selling milk below standard	June 4, 1909	Fined \$10 and costs.
Marion	15131	Bert N. Lay, Indianapolis	Selling milk below standard	June 4, 1909	Fined \$10 and costs.
Marion	15132	Hammond & Pasquire, Indianapolis	Selling milk below standard	June 4, 1909	Fined \$10 and costs.
Marion	15054	Louis Cartchauser, Indianapolis	Selling milk below standard	June 3, 1909	Fined \$10 and costs.
Marion	14969	Abraham Jacobson, Indianapolis	Selling milk below standard	June 3, 1909	Fined \$10 and costs.
Marion	14984	Smith's Restaurant, Indianapolis	Selling soda containing saccharin	June 3, 1909	Fined \$10 and costs.
Marion	15300	Eddie Lockwood, Indianapolis	Selling adulterated catnip	Dec. 12, 1908	Fined \$10 and costs.
Marion	—	Chas. Lockwood, Indianapolis	Selling decomposed nuts	Dec. 29, 1908	Fined \$10 and costs.
Marion	—	Court House Grocery, Indianapolis	Selling decomposed nuts	Dec. 29, 1908	Fined \$10 and costs.
Marion	—	W. J. Stewart, Indianapolis	Exposed candy	Dec. 29, 1908	Fined \$10 and costs.
Marion	—	W. J. Stewart, Indianapolis	Exposed food	Jan. 26, 1909	Fined \$10 and costs.
Marion	—	W. J. Stewart, Indianapolis	Exposed food	Jan. 26, 1909	Fined \$10 and costs.
Miami	14086	J. W. Miller, Peru	Selling hamburger containing sulphites	May 1, 1909	Fined \$10 and costs.
Miami	15457	Exnever Ice Cream Co., Peru	Selling ice cream below standard	July 10, 1909	Fined \$10 and costs.
Miami	15458	Taylor Ice Cream Co., Peru	Selling ice cream below standard	July 10, 1909	Fined \$10 and costs.
Miami	—	James Black, Peru	Selling meat under unsanitary conditions	July 31, 1909	Fined \$10 and costs.
Miami	—	E. Whittier, Peru	Rotten eggs	July 30, 1909	Fined \$10 and costs.
Miami	15736	Sanitary Milk Co., Peru	Skimmed milk	Aug. 19, 1909	Fined \$10 and costs.
Monroe	14688	Geo. Poulsen, Bloomington	Selling ice cream below standard	May 24, 1909	Fined \$10 and costs.
Monroe	14696	M. D. Wells, Bloomington	Selling skimmed milk	May 24, 1909	Fined \$10 and costs.
Monroe	14684	F. E. McFarren, Bloomington	Selling milk below standard	June 14, 1909	Fined \$10 and costs.
Monroe	14687	A. C. Coyle, Bloomington	Selling milk below standard	June 14, 1909	Fined \$10 and costs.

Montgomery	15906	G. W. Ammerman, Crawfordville	Uncovered food	Oct. 14, 1909	Fined \$10 and costs.
Montgomery	15906	C. W. Reeves, Crawfordville	Selling ice cream below standard	Sept. 13, 1909	Fined \$10 and costs.
Montgomery	15908	C. J. Rutman, Crawfordville	Selling ice cream below standard	Sept. 13, 1909	Fined \$10 and costs.
Montgomery	16004	B. F. Conrad, Darlington	Selling oregrade containing benzole	Sept. 13, 1909	Fined \$10 and costs.
Orange	15202	Walter M. Cheterson, Darlington	Selling pop containing saccharin	Sept. 13, 1909	Fined \$10 and costs.
Orange	15203	John L. Lee, French Lick	Selling ice cream below standard	June 22, 1909	Fined \$10 and costs.
Orange	15203	Willard & Simpson, French Lick	Selling milk below standard	June 22, 1909	Fined \$10 and costs.
Orange	15154	Edwin Phillips, French Lick	Selling milk below standard	June 22, 1909	Fined \$10 and costs.
Owen	—	E. B. Phillips, French Lick	Unsanitary bakery	June 8, 1909	Fined \$10 and costs.
Owen	—	Johnson & Co., Freedom	Unsanitary restaurant	Sept. 23, 1909	Fined \$10 and costs.
Owen	—	Chas. Wilk, Spencer	Selling distilled as apple vinegar	Sept. 23, 1909	Fined \$10 and costs.
Owen	—	Edna Knight, Spencer	Interference with other	May 13, 1909	Fined \$10 and costs.
Owen	—	Daniel W. Smith, Spencer	Unsanitary restaurant	May 11, 1909	Fined \$10 and costs.
Owen	—	James W. Smith, Spencer	Unsanitary slaughter house	May 11, 1909	Fined \$10 and costs.
Owen	—	James W. Smith, Spencer	Unsanitary slaughter house	May 22, 1909	Fined \$10 and costs.
Owen	—	Victor Crane, Spencer	Unsanitary grocery store	Mar. 29, 1909	Fined \$10 and costs.
Owen	—	Oscar Chesterfield, Clinton	Unsanitary restaurant	Oct. 20, 1908	Fined \$10 and costs.
Parke	—	Patrick Mahoney, Rockville	Selling restaurant	Nov. 13, 1908	Fined \$10 and costs.
Parke	14732	Wilbur G. Berry, Rockville	Uncovered cauld	June 18, 1909	Fined \$40 and costs.
Ripley	15215	Frank J. Reel, Batesville	Uncovered cauld	June 18, 1909	Fined \$15 and costs.
Ripley	—	Frank W. Gehring, Batesville	Selling milk below standard	June 18, 1909	Fined \$15 and costs.
St. Joseph	14816	Joe Labadie, South Bend	Selling ice cream below standard	Sept. 27, 1909	Fined \$10 and costs.
St. Joseph	14578	F. A. Kreutz, Mishawaka	Unsanitary meat market	July 21, 1909	Fined \$10 and costs.
St. Joseph	14583	P. A. Weber, Mishawaka	Selling skimmed milk	July 4, 1909	Fined \$10 and costs.
St. Joseph	14591	Peter Brungert, Mishawaka	Hambuger containing sulphites	May 7, 1909	Fined \$10 and costs.
St. Joseph	14591	Desira Koehnert, Mishawaka	Sausage containing sulphites	May 7, 1909	Fined \$10 and costs.
St. Joseph	14592	John Huebner, Mishawaka	Watered milk	May 17, 1909	Fined \$10 and costs.
St. Joseph	—	Max Backlund, South Bend	Unprotected food	May 17, 1909	Fined \$10 and costs.
St. Joseph	14566	Holger, South Bend	Selling hamburger containing sulphites	May 11, 1909	Fined \$10 and costs.
St. Joseph	14570	G. E. Barnett, South Bend	Selling sausage containing sulphites	May 7, 1909	Fined \$10 and costs.
St. Joseph	14573	J. P. Rospiethoski, South Bend	Selling hamburger containing sulphites	May 17, 1909	Fined \$10 and costs.
Sullivan	—	Wm. M. Drager, Sullivan	Selling ice cream below standard	June 1, 1909	Fined \$10 and costs.
Sullivan	—	Fred Newton, Sullivan	Selling artificial cider, saccharin	June 1, 1909	Fined \$25 and costs.
Sullivan	—	J. M. Sweeney, Dugger	Selling soda containing saccharin	July 16, 1909	Fined \$10 and costs.
Sullivan	15622	Hicks & Brown, Carlisle	Selling pop containing benzene of soda	July 21, 1909	Fined \$15 and costs.
Sullivan	—	Nathan Cox, Sullivan	Unsanitary restaurant	Sept. 27, 1909	Fined \$10 and costs.
Sullivan	—	Stivers and Drager, Sullivan	Unsanitary restaurant	Sept. 28, 1909	Fined \$10 and costs.
Tippecanoe	—	Joe Stewart, Colburn	Selling oleomargarine in restaurant	Nov. 6, 1908	Fined \$10 and costs.
Tippecanoe	15679	Gus Baumgard, LaFayette	Selling pop containing salicylic acid	Sept. 14, 1909	Fined \$10 and costs.
Tippecanoe	—	H. G. Conrady, LaFayette	Refused to sell milk	July 23, 1909	Fined \$10 and costs.
Vermilion	—	Palcos Ice Cream Co., Terre Haute	Unsanitary meat shop	June 18, 1909	Fined \$10 and costs.
Wabash	15739	Wm. Newman, Wabash	Selling ice cream below standard	July 8, 1909	Fined \$10 and costs.
Wayne	15375	J. T. Foster, Richmond	Selling white pop	Aug. 24, 1909	Fined \$10 and costs.
Wayne	15375	J. T. Foster, Richmond	Selling sarsaparilla pop	July 1, 1909	Fined \$10 and costs.
Wayne	**577	J. T. Foster, Richmond	Selling sarsaparilla pop, saccharin	July 1, 1909	Fined \$10 and costs.
Wells	10776	Chas. Kaltwasser, Bluffton	Selling adulterated pork sausage	Dec. 27, 1909	Fined \$10 and costs.

SOME INVESTIGATIONS CONCERNING THE KEEPING QUALITIES OF SUGAR SYRUPS, FRUIT SYRUPS AND CRUSHED FRUITS.

H. E. BARNARD AND I. L. MILLER.

It has been the practice of the laboratory to study each year some trade problem for the purpose of securing information and obtaining results of practical value to the men who are engaged in the preparation and distribution of food and drug products. The work which we have done this year was suggested by the President of the State Pharmaceutical Association as a question of great importance to druggists and others operating soda fountains. Our inspectors have found the soda fountain problem a serious one to handle. Many are unsanitary, are not supplied with proper means for refrigeration and are run by unskilled men.

The modern soda fountain with all its accessories is not a simple machine, and its operation is not easily conducted, especially if its management is intrusted to the careless and ignorant handling of a young boy. The character of the products served is not conducive to cleanliness, since as the base of nearly all soda beverages is sugar syrup there must always be more or less stickiness of utensils, draft tubes and counters, and as the tendency of all dilute sugar solutions is to undergo alcoholic and later acetic fermentations, the man behind the carbonator has no small task set him if he wishes to serve only clean and acceptable drinks. The rapid increase in the number of staple fountain preparations which are invented or designed to catch the public taste has made it impossible for the dispenser to prepare all goods he serves, and today a large part of the syrups, crushed fruits, root beers and other much used ingredients are bought in glass, tin or earthen jugs from the manufacturers and kept in stock until used. It has been the practice of syrup and crushed fruit packers and canners to put up their goods in a heavy sugar syrup, and then, in order to prevent the possibility of spoiling, to add some chemical preservative. Our experiments have been carried on for the purpose of determining whether or not preservatives other than sugar are necessary and the conditions under which crushed fruits, fruit syrups and fountain preparations should be properly handled.

The scientific study of many practical questions often falls far short of producing results because of too technical treatment. In

our work we have endeavored to follow exactly the methods used at the ordinary well operated fountain, and we feel sure that every result which is here presented can be duplicated by any careful dispenser. Our experiments have been carried on with a modern so-called iceless fountain made and loaned us by the Marietta Glass Co., of Indianapolis, so arranged that all the refrigeration is produced by ice used in packing the ice cream buckets, one of which is at either end of the fountain.

The first problem to be studied was that of determining the most satisfactory strength of sugar solution to employ in diluting the concentrates. The sugar employed was what is known as "Crystal A," and various syrups were made from it containing 8, 10, 12, 14 and 16 pounds of sugar to the gallon of water. The syrups were prepared both by hot and cold process. In the hot process, undoubtedly the best way of preparing sugar solutions, the water was heated to boiling and the sugar slowly added, stirring until solution was complete. In the cold process the sugar was added directly to the water with stirring. In all of our work distilled water has been employed. The kind of water employed is of course immaterial so far as the character of the product is concerned if the dispenser is careful to use a pure water free from mould spores and harmful bacteria. Although five strengths of syrups were made up, yet in most of our work we have employed the ten and fourteen-pound solutions. The syrups so prepared have been kept both in the refrigerator and at room temperature. No appreciable difference has been observed in the keeping qualities of the syrups. In no instance have the syrups fermented or soured, although several lots of ten and twelve-pound syrups made up cold have, after standing for several weeks, developed a fine greenish white mould, evidently one of the penicilliums. These growths have never appeared in syrups containing sixteen pounds of sugar to the gallon, and but one instance in a fourteen-pound syrup.

The crushed fruits used in the experiments were obtained from three sources. One lot was made up at the laboratory from fresh fruit purchased on the Indianapolis market, using the usual formulas employed at the fountain, that is to say, two parts of fresh fruit with its juice to one part of sugar. Two other lots were preserved in tins and sold in the State for soda fountain purposes. The fourth lot was a well known brand of goods prepared especially for use at the fountain.

In our desire to study the different kind of fruit preparations

we selected pineapple, strawberry, raspberry, blackberry, cherries and sliced peaches, and a mixture known as walnut sundae. At first these goods were prepared with and without benzoate of soda, but since it became necessary for us to rush the work in order to complete it, we did not long continue our investigations as to the keeping qualities of preserved goods, it being self-evident that if the nonpreserved goods remained in good shape, goods containing one-tenth of one per cent. of benzoate of soda would certainly keep under the same conditions. The crushed fruits were prepared for use at the fountain by adding one part of the concentrated fruit to two or more parts as required of the simple syrup of the strengths above mentioned, usually, however, employing only two solutions, namely, the ten and fourteen-pound mixtures. After using a portion of the concentrates the remaining portion has been placed in unsealed but stoppered jars in the refrigerator of the fountain, where they have remained at a temperature varying from forty to fifty degrees F. from one to three months. Several lots which were nearly all used up were allowed to remain outside of the refrigerator at room temperature, and to our great surprise these concentrates neither fermented nor grew mouldy, but through loss of water by evaporation eventually solidified. In our endeavor to grow certain types of moulds which we supposed would be readily possible in the hot, moist air of the laboratory, we exposed in open topped petri dishes various fruits, syrups and crushed fruits. It is interesting and even surprising to note that goods so exposed, although open to contamination, have refused absolutely to develop moulds.

Since the chief complaint of dealers has been that the concentrates, both fruit and syrup, spoil shortly after being opened, and must, therefore, be thrown away, the keeping qualities in these goods have been fully studied. The concentrated fruit syrups manufactured by three different houses were kept in the refrigerator as suggested above at a temperature ranging from forty to fifty Fahrenheit, in no case less than forty-nine days. They were then thrown out at different times, ranging from forty-nine to eighty-five days after being placed in the refrigerator, not because they showed any indication of spoilage but in order to make room for other work. It should be noted that two or three of the brands studied, including such syrups as lemon, pineapple, peach, strawberry and raspberry, were in tin cans, and it was therefore impossible to close the tops except by pushing down

the ragged edged cover. A similar study was made on concentrated crushed fruits produced by five manufacturers, and as well on goods made at the laboratory. These products were also kept in the refrigerator of the fountain at a temperature ranging from forty to fifty Fahrenheit. Twenty-seven different lots of pineapple, cherry, strawberry, walnut sundae, peaches, raspberry and chocolate were kept until they showed evidence of fermentation or mould, except in eight cases in which the stock was used up at once. The longest period between the opening of the can and the beginning of fermentation was sixty-four days and the shortest period was nine days, at the end of which time a slight mould developed on the top of the product, which was a sample of strawberries, purchased on the local market, crushed with sugar and put up cold, that is, without any heat being applied to sterilize the product. Our results show conclusively that crushed fruits can be satisfactorily preserved at a temperature not higher than fifty or fifty-five. During an extremely hot period in the month of August, when the room temperature was between eighty and eighty-five constantly, a series of experiments were run on concentrated crushed fruits to determine their keeping qualities at room temperature. The maximum period during which the goods remained free from fermentation was seven days. The minimum period was three days, at the end of which a mould developed on the surface of a raspberry crushed fruit.

The crushed fruits prepared as indicated above by dilution with sugar syrup were then placed in small glass bowls, such as are ordinarily used at the fountain, covered with a loosely fitting lid, and then handled in the following ways: The first lot was kept at room temperature all the time, the second lot was kept at room temperature for sixteen hours and then in the refrigerator of the fountain at a temperature averaging from 40° to 50° F. for eight hours. The third lot was kept in the crushed fruit jars which constitute part of the fountain equipment, at a temperature ranging from 47° to 63° F. In other words, we have endeavored to treat the crushed fruits just as an ordinary dispenser treats them, employing in one instance no precaution for keeping the goods, and in the other cases such precautions as would ordinarily be exercised by the intelligent operator. In but one instance in the course of our experiments with 180 samples, which were started on the 16th day of April, have moulds of any kind developed in the crushed fruits. The only change in the character of the crushed fruits has been the development of alcoholic and acetic fermentation. As soon as any fer-

mentation was noticeable, as evinced by the formation of carbon dioxide, the goods have been marked unsalable, although in ordinary practice there is no reason why they could not have been used for a longer period. The results which I shall here give indicate only the period in which they kept in an absolutely perfect condition. The first lot of crushed pineapple, made up with simple syrup, containing ten pounds of sugar to the gallon, kept for twenty days in the fountain fruit jars, and for seventeen days when exposed at room temperature for sixteen hours and refrigerated for eight hours.

The first lot of strawberries made up with ten-pound sugar syrup kept in each instance twelve days; when a fourteen-pound syrup was used they kept fourteen and eighteen days, respectively. Jars prepared with ten-pound sugar syrup kept ten and fourteen days, and with fourteen-pound sugar syrup, twelve and sixteen days. During this period the room temperature ranged from 68.3° to 73.9° Fahrenheit, and the air was very moist. It will be noticed that up to this time no fruits had been exposed at room temperature all the time, but the next series of experiments included a study of fruits so exposed.

The first lot of crushed pineapple made up at the laboratory from the raw fruit, as before described, and prepared with a ten-pound sugar solution, kept for seven days when exposed for sixteen hours at room temperature and eight hours in the refrigerator. The goods placed in the crushed-fruit bowls on top of the fountain kept for two and one-half days. Goods made up of the fourteen-pound sugar solution kept approximately twice as long. Crushed strawberries made up in a similar way with similar solutions kept seven and one-half days and ten and one-half days and three and one-half days. When a fourteen-pound sugar solution was used they kept eight and one-half days, fifteen days and five days. Pineapple put up in tins, when studied in this same way, kept eight days, thirteen days and five days in ten-pound sugar syrup solution, and nine days, twelve days and six days in fourteen-pound sugar syrup solution. Strawberries put up in glass kept nine days, twelve days and six days in ten-pound sugar solution, and in a fourteen-pound sugar solution, eleven days, fourteen days and seven days. Sliced peaches put up in glass kept in ten-pound sugar syrup solution, nine days, fourteen days and five days, and in fourteen-pound sugar syrup solution, eleven days, sixteen days and six and one-half days.

Walnut sundae made up with ten-pound sugar syrup kept at

room temperature seven days, and when placed in the refrigerator for part of the time, for twelve days. The same goods put up with sixteen-pound sugar syrup kept twelve days exposed at room temperature and twenty-seven days when kept for a third of the time in the refrigerator.

The study of the keeping qualities of preserved and unpreserved concentrated fountain syrups was carried on by taking definite portions of the usual concentrated fruit syrups, such as lemon, pineapple, peach, raspberry and strawberry and making up the proper strength for dispensing by adding one part of the syrup to two, three, or in some cases, to four of sugar syrup. The solutions as prepared were placed in the ordinary jars provided for that purpose in the fountain. The sugar solutions used varied in density from ten to sixteen pounds sugar to the gallon, and were made both by the hot and cold process. A definite portion was drawn by the pump from the jars each few days and the acidity of the solution determined and the character of the syrup noted. The temperature of the syrup jars varied somewhat during the course of experiment, ranging from 53.1° to 70.0° Fahrenheit, the average temperature, however, being approximately 65° .

The first syrup to be studied was the pineapple preserved with benzoate of soda and made up of sugar syrup at ten, fourteen and sixteen pounds to the gallon density. After keeping these syrups for fifty-four days at fountain temperature and observing no change whatever in their character, the solutions were discarded to make room for other experiments. Pineapple syrups containing no preservative was placed in the jars at the same time and studied for a similar period of fifty-four days. The acidity of the first solutions made up with ten pounds of sugar to the gallon in the cold, increased rapidly after the tenth day. The acidity of the second syrup, made up with a sugar syrup of ten pounds to the gallon density, hot, showed no increase in acidity until after the eighteenth day. The third syrup made up in a sugar solution of sixteen pounds to the gallon density, showed no decided increase in acidity until after the thirty-fifth day. In other words, all of the pineapple syrups kept perfectly for at least ten days after being made up, and when made up in a greater concentration than ten pounds of sugar to the gallon, kept for a much longer period. Similar series of experiments were made with lemon syrups, taking three unpreserved syrups and three syrups preserved with benzoate of soda. In carrying the investigation forward, as in the case of pineapple

syrup, the results obtained were somewhat different, however, as at the end of the fiftieth day practically no change in acidity was apparent in either the unpreserved or the preserved goods.

The results as given are but a few of the total number of experiments run during the course of the investigation which covered a study of 296 crushed fruits, fruit syrups, sugar syrups and concentrates. The results briefly summarized indicate, 1st, that concentrated crushed fruit and fruit syrups may be kept without loss for from one to three months after opening, when kept at a temperature below 50° Fahrenheit; 2d, that fountain syrups made up with fourteen-pound sugar syrup will keep from two to four weeks without the slightest evidence of fermentation; 3d, that crushed fruit concentrates diluted with sugar syrup of fourteen pounds to the gallon strength will keep when exposed at room temperature from three to ten days, and when goods are placed in the refrigerator of the fountain during the night time for a period of eight hours, the time during which they keep in good condition is nearly doubled; 4th, the keeping quality of crushed fruit and fruit syrups is influenced materially by the concentration of the sugar solutions used as diluents. While in most instances a ten-pound syrup is sufficient to hold the goods for a period long enough to allow of their disposal, yet concentrates which are from twelve to sixteen pounds materially improve the keeping qualities of the goods. From our experiments it appears that a fourteen-pound sugar solution is best adapted for use, although a saturated sugar syrup which contains about sixteen pounds to the gallon of water can always be employed with good results; 5th, it is apparent from our investigation that a sugar syrup may best be prepared by dissolving the sugar in hot water as follows: Bring the water to boiling and pour into it, while stirring, the number of pounds of sugar which it is desired to use. If tap water or unsterilized water is used, the syrup should be brought to 100° C. While sugar syrups made up in the cold are in most cases satisfactory, yet it is evident that they may contain mould spores which injure the keeping quality of the preparation.

CONCENTRATED CRUSHED FRUITS. CHART I.

Fruit.	Number.	Brand.	Benzonate.	Polyriscope Readings		Sugars.		Average Exposures per Week	Date Opened or Repaired	Date Disposal.	Cause Disposal.	Kind of Mould.	Days Good.	Where Kept.	Temperature of Fruits.	
				Temp. °C.	Direct.	Invert.	Sucrose-%.	Ap. x. Sucrose-%.	Invert Sugar						Maximum.	Minimum.
Pineapple.	22	J. H. S.	—	37.75	24.0	+24.40	-18.26	32.7	61.5	30.0	Discont.	—	48	Refrig.	48.7	38.7
Pineapple.	23	J. H. S.	—	37.85	24.0	+45.80	-18.59	49.3	60.6	12.0	Discont.	—	45	Refrig.	48.7	38.7
Strawberries.	24	J. H. P.	—	35.07	23.5	+4.00	-14.96	14.4	35.4	—	All used	—	—	—	—	—
Strawberries.	27	J. H. P.	—	36.05	23.5	+21.40	-12.32	25.7	39.8	14.6	All used	—	—	—	—	—
Pineapple.	31	Lab.	—	35.22	23.5	+41.00	-13.64	41.7	44.1	2.3	6-25	Penicillium.	30	Refrig.	50.5	42.0
Strawberries.	33	Lab.	—	34.62	23.5	+24.40	-12.32	28.0	39.8	12.2	Ferment.	—	41	Refrig.	50.5	42.0
Pineapple.	41	J. H. S.	—	35.55	23.5	+15.40	-15.73	23.7	50.8	28.2	Discont.	—	60	Refrig.	52.0	42.0
Strawberries.	43	J. H. S.	—	33.71	23.5	+5.00	-15.41	15.5	49.8	35.7	Mould.	Penicillium.	49	Refrig.	52.0	42.0
Strawberries.	47	J. Lotus	—	36.19	23.5	+4.40	-13.42	6.9	43.4	38.1	7-16	Penicillium.	46	Refrig.	52.0	42.0
Cherries.	49	J. H. S.	—	34.08	23.5	+39.60	-12.98	40.2	41.9	1.7	6-4	—	32	Refrig.	52.5	42.0
Walnut Sundae	51	J. H. S.	—	37.05	23.5	+6.80	-14.30	16.1	46.2	31.6	Ferment.	—	64	Refrig.	52.5	42.0
Cherries.	60	Lab.	—	35.04	23.5	+9.80	-18.20	21.4	58.8	39.5	6-10	Penicillium.	23	Refrig.	50.9	42.0
Strawberries.	65	Lab.	—	34.15	23.5	+19.80	-11.44	24.1	38.8	15.6	Mould.	—	9	Refrig.	50.5	46.3
Pineapple.	67	Lab.	—	34.22	26.5	+38.40	-12.98	39.7	44.1	4.7	7-12	Penicillium.	13	Refrig.	52.0	46.3
Raspberries.	69	Lab.	—	34.86	26.5	+9.40	-11.00	15.8	34.8	23.5	Mould.	—	16	Refrig.	52.0	46.3
Raspberries.	70	J. H. P.	—	36.20	26.5	+8.00	-13.42	16.6	46.4	31.3	Discont.	—	51	Refrig.	52.5	47.0
Chocolate.	73	J. H. S.	—	36.77	26.5	+43.20	-14.08	44.4	48.7	4.3	7-16	Penicillium.	14	Refrig.	52.5	46.3
Cherries.	77	J. H. S.	—	37.03	24.5	+1.00	-15.84	11.3	52.0	42.5	All used	—	31	Refrig.	52.5	47.0
Loganberries.	77	Bishop	—	33.91	24.5	-7.00	-6.58	1.2	23.2	28.4	All used	—	—	—	—	—
Strawberries.	82	J. H. S.	—	35.42	25.5	+10.20	-9.90	0.5	53.1	34.1	8-10	Penicillium.	15	Refrig.	52.5	47.0
Strawberries.	84	Bishop	—	37.99	25.5	+3.40	-2.86	0.0	9.4	11.8	Mould.	—	30	Refrig.	55.0	49.0
Strawberries.	86	Pavey	—	35.00	25.5	+65.60	-18.48	65.1	163.3	0.0	8-1	—	—	—	—	—
Chocolate.	90	Bishop	—	33.14	27.0	+13.00	-18.26	24.2	62.6	40.0	Discont.	—	—	—	—	—
Pineapple.	100	Bishop	—	36.96	27.0	+20.80	-12.84	26.8	47.1	21.6	8-26	—	—	—	—	—
Peaches.	102	Bishop	—	34.59	27.0	+16.40	-9.68	20.1	133.7	30.3	All used	—	—	—	—	—
Cherries.	109	J. H. P.	—	34.97	27.0	+3.40	-11.88	11.8	40.7	30.3	8-6	—	—	—	—	—
Strawberries.	111	J. H. S.	—	35.07	27.0	+4.60	-12.98	13.6	44.5	32.5	8-26	—	20	Refrig.	55.0	49.0
Peaches.	121	J. H. S.	—	37.13	27.0	+19.00	-17.82	28.5	61.1	34.3	8-19	—	7	Room.	80.6	78.9
Pineapple.	123	J. H. S.	—	37.81	27.0	+2.40	-14.08	12.8	45.3	37.5	Ferment.	—	7	Room.	80.6	78.9
Raspberries.	125	J. H. P.	—	39.23	27.0	+2.40	-14.08	12.8	45.3	37.5	Mould.	Penicillium.	3	Room.	80.6	78.9
Strawberries.	127	J. H. P.	—	39.49	27.0	+2.40	-14.08	12.8	45.3	37.5	Discont.	—	3	Refrig.	55.0	51.0
Cherries.	129	J. H. S.	—	35.32	27.0	+12.00	-14.80	2.2	50.7	51.3	Ferment.	—	7	Room.	80.6	78.9
Pineapple.	131	J. H. P.	—	35.51	27.0	+13.30	-12.98	24.4	44.5	21.3	8-16	—	4	Room.	80.6	78.9

CRUSHED FRUITS PREPARED FOR DISPENSING. CHART II.

NOTE.—Key to column No. 2:

A = 10 lbs. syrup.

B = 14 lbs. syrup.

D = 16 lbs. syrup.

H = Hot process syrup.

C = Cold process syrup.

L = Room temperature, 16 hrs.; Refrigerator

temperature, 8 hrs.

M = Room temperature, all the time.

O = Fountain temperature all the time.

FRUIT.	Number.	From Concentrate Number.	Brand.	Bonsale.	Formula of Sugar Syrup.			Formula of Prepared Fruits.			Sugar.			Date Fermentation.	Moulds.	Temperature of Fruits.			Weather.						
					Weight, lbs.	Process.	Number.	Conc. Fruit, Osm.	Sugar Syrup, Osm.	Sucrose, %.	Approx. Sucrose Added, %.	Invert Sugar, %.	Date Prepared.			Maximum.	Minimum.	Mean.	Tempera- ture.		Humidity.		Sunshine, %.		
																			Max.	Mean.	Max.	Min.		Mean.	
Pineapple.	23ALH	22	J. H. S.	—	10	Hot.	2H	10	20	49.0	58.7	10.2	4-16	5-2	17.0	—	73.9	41.7	53.3	79	53.6	87	49	63	50
	23AOH	22	J. H. S.	—	10	Hot.	2H	10	20	49.0	58.7	10.2	4-16	5-6	20.0	—	56.7	50.0	53.3	82	54.2	87	47	67	60
	23BLC	22	J. H. S.	—	14	Cold.	6C	10	20	52.8	62.4	9.8	4-16	4-26	10.0	—	72.1	41.7	53.7	79	55.7	87	49	66	51
	23BOC	22	J. H. S.	—	14	Cold.	6C	10	20	52.8	62.4	9.8	4-16	5-3	18.0	—	56.7	50.7	53.7	79	52.9	87	47	66	51
Pineapple.	25ALH	24	J. H. S.	+	10	Hot.	2H	10	20	54.8	58.4	4.0	4-16	5-13	28.0	—	73.9	38.7	53.0	82	53.9	96	47	70	55
	25AOH	24	J. H. S.	+	10	Hot.	2H	10	20	54.8	58.4	4.0	4-16	5-24	39.0	—	76.7	48.3	53.0	82	55.2	96	47	69	57
	25BLC	24	J. H. S.	+	14	Cold.	6C	10	20	58.4	62.0	3.9	4-16	5-13	28.0	—	73.9	38.7	53.0	82	53.9	96	47	70	55
	25BOC	24	J. H. S.	+	14	Cold.	6C	10	20	58.4	62.0	3.9	4-16	5-24	39.0	—	56.7	48.3	53.0	82	55.2	96	47	69	57
Strawberries.	28ALC	27	H. P.	—	10	Cold.	25C	10	20	45.3	49.8	4.7	5-8	5-20	12.0	—	73.0	38.7	52.4	79	59.4	96	57	74	64
	28AOC	27	H. P.	—	10	Cold.	25C	10	20	45.3	49.8	4.7	5-8	5-20	12.0	—	54.7	48.3	52.4	79	59.4	96	57	74	64
	28BLC	27	H. P.	—	14	Cold.	6C	8	16	50.9	55.4	4.6	5-8	5-22	14.0	—	73.0	38.7	52.8	79	59.4	96	49	71	56
	28BOC	27	H. P.	—	14	Cold.	6C	8	16	50.9	55.4	4.6	5-8	5-26	18.0	—	54.7	48.3	52.8	79	59.8	96	49	71	56
Cherries.	30ALC	29	H. P.	—	10	Cold.	25C	9	18	41.8	52.7	11.3	5-8	5-18	10.0	—	73.0	38.7	52.5	79	59.1	96	60	77	59
	30AOC	29	H. P.	—	10	Cold.	25C	9	18	41.8	52.7	11.3	5-8	5-22	14.0	—	54.7	48.3	52.5	79	59.4	96	57	74	56
	30BLC	29	H. P.	—	14	Cold.	6C	9	18	47.6	58.2	11.0	5-8	5-20	12.0	—	73.0	38.7	53.1	79	59.4	96	57	74	64
	30BOC	29	H. P.	—	14	Cold.	6C	9	18	47.6	58.2	11.0	5-8	5-24	16.0	—	54.7	48.3	53.1	79	59.8	96	49	71	60
Pineapple.	32AOC	31	Lab.	—	10	Cold.	25C	10	20	50.5	51.3	0.7	5-26	6-2	7.0	—	72.5	43.3	53.5	79	67.9	99	68	79	53
	32AMC	31	Lab.	—	10	Cold.	25C	10	20	50.5	51.3	0.7	5-26	5-28	2.5	—	72.5	43.3	53.5	79	65.0	99	71	85	37

CHART II—Continued.

FRUIT	Formula of Pre- pared Fruits.		Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				Formula of Sugar Syrup.				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Walnut Sundae.....	52ALC	49	J. H. S.	10	Cold	48C	5	10	55.5	31.0	0.5	6-4	—	78.3	44.7	...	86	71.7	92	60	74	73
	53AMC	49	J. H. S.	10	Cold	48C	5	10	55.5	31.0	0.5	6-4	6-11 12.0	78.3	71.6	74.7	86	73.3	92	60	74	66
	50DLC	49	J. H. S.	16	Cold	1C	5	10	59.6	59.0	0.5	6-4	6-11 20.0	79.7	53.0	...	86	73.3	92	42	71	66
	50DLC	49	J. H. S.	16	Cold	1C	5	10	59.6	59.0	0.5	6-4	6-16 12.0	78.3	71.6	75.0	86	73.7	92	42	71	73
Sliced Peaches.....	52ALC	51	J. H. S.	10	Cold	46C	8	16	44.5	32.2	10.5	6-7	6-16 9.0	78.3	44.7	...	86	71.6	92	66	71	66
	52AMC	51	J. H. S.	10	Cold	46C	8	16	44.5	32.2	10.5	6-7	6-20 5.0	78.3	44.7	76.6	86	73.4	92	66	71	66
	52AMC	51	J. H. S.	10	Cold	46C	8	16	44.5	32.2	10.5	6-7	6-20 14.0	60.0	53.0	56.7	86	70.2	92	58	73	68
	52BLC	51	J. H. S.	14	Cold	45C	8	16	47.2	25.7	10.1	6-7	6-18 11.0	78.3	53.3	...	86	70.5	92	66	74	64
	52BMC	51	J. H. S.	14	Cold	45C	8	16	47.2	25.7	10.1	6-7	6-14 6.5	78.3	53.3	75.7	86	73.9	92	66	78	59
	52BMC	51	J. H. S.	14	Cold	45C	8	16	47.2	25.7	10.1	6-7	6-22 16.0	60.0	53.0	56.4	86	70.5	92	42	71	61
Cherries.....	61BLH	60	Lab.	14	Hot	11H	8	16	49.4	64.4	11.2	6-10	6-28 5.0	79.7	61.0	...	90	71.5	90	42	70	74
	61BMH	60	Lab.	14	Hot	11H	8	16	49.4	64.4	11.2	6-10	6-26 16.0	79.7	61.0	74.9	90	72.2	90	42	72	74
	61BOH	60	Lab.	14	Hot	11H	8	16	49.4	64.4	11.2	6-10	7-10 30.0	61.0	53.0	55.3	90	71.8	90	42	69	74
Strawberries.....	66AOH	65	Lab.	10	Hot	63H	4	12	48.0	51.4	3.6	6-30	7-10 9.5	79.7	48.0	...	90	69.5	86	40	66	71.5
	66AMH	65	Lab.	10	Hot	63H	4	12	48.0	51.4	3.6	6-30	7-8 7.5	79.7	48.0	76.6	90	71.3	86	40	65	69
	66BLH	65	Lab.	14	Hot	11H	4	12	57.0	60.3	3.5	6-30	7-13 13.0	79.7	48.0	76.7	90	68.9	86	49	66	71
	66BYH	65	Lab.	14	Hot	11H	4	12	57.0	60.3	3.5	6-30	7-7 7.0	79.7	48.3	...	90	68.9	86	49	66	71
	66ALC	65	Lab.	10	Cold	62C	4	12	47.3	50.8	3.6	6-30	7-7 6.5	79.7	48.3	77.8	90	71.6	86	49	66	71
	66AMC	65	Lab.	10	Cold	62C	4	12	47.3	50.8	3.6	6-30	7-4 4.0	79.7	48.3	77.8	90	69.6	86	49	65	69
	66BLC	65	Lab.	14	Cold	64C	4	12	53.8	57.2	3.6	6-30	7-8 8.0	79.7	48.0	77.3	90	70.0	84	49	61	67
	66BMC	65	Lab.	14	Cold	64C	4	12	53.8	57.2	3.6	6-30	7-5 5.0	79.7	48.0	77.3	90	69.6	86	49	61	67
Pineapple.....	68ALH	67	Lab.	10	Hot	63H	5	11	48.2	51.9	1.3	6-30	7-5 4.5	79.7	49.3	...	90	70.0	84	49	61	67
	68AMH	67	Lab.	10	Hot	63H	5	11	48.2	51.9	1.3	6-30	7-4 3.5	79.7	49.3	77.8	90	71.6	86	49	61	67
	68BLH	67	Lab.	14	Hot	11H	6	13	57.7	60.9	1.2	6-30	7-8 8.0	79.7	49.3	77.8	90	69.6	86	49	61	67
	68BMH	67	Lab.	14	Hot	11H	6	13	57.7	60.9	1.2	6-30	7-4 4.0	79.7	49.3	77.8	90	70.0	84	49	61	67
	68ALC	67	Lab.	10	Cold	62C	6	13	47.3	50.8	3.6	6-30	7-5 4.5	79.7	49.3	78.1	90	73.0	86	49	61	67
	68AMC	67	Lab.	10	Cold	62C	6	13	47.3	50.8	3.6	6-30	7-3 3.0	79.7	49.3	78.1	90	68.9	86	49	61	67
	68BLC	67	Lab.	14	Cold	64C	6	13	53.8	57.2	3.5	6-30	7-6 6.0	79.7	48.3	77.8	90	71.6	86	49	61	67
	68BMC	67	Lab.	14	Cold	64C	6	13	53.8	57.2	3.5	6-30	7-4 4.0	79.7	48.3	77.8	90	68.9	86	49	61	67
Raspberry, Black.....	70ALH	69	Lab.	10	Hot	63H	5	11	43.5	49.2	7.0	6-30	7-14 13.5	79.7	48.0	...	90	71.6	92	49	70	97
	70AMH	69	Lab.	10	Hot	63H	5	11	43.5	49.2	7.0	6-30	7-9 8.5	79.7	48.0	76.6	90	70.0	86	49	63	1.70
	70BLH	69	Lab.	14	Hot	11H	5	11	51.9	57.4	6.7	6-30	7-20 20.0	79.7	47.0	...	90	71.7	92	49	68	6.74
	70BMH	69	Lab.	14	Hot	11H	5	11	51.9	57.4	6.7	6-30	7-10 9.5	79.7	47.0	76.7	90	70.5	86	49	68	6.74
	70ALC	69	Lab.	10	Cold	62C	5	11	42.9	48.6	7.0	6-30	7-8 7.5	79.7	48.0	...	90	69.6	86	49	63	0.69
	70AMC	69	Lab.	10	Cold	62C	5	11	42.9	48.6	7.0	6-30	7-5 4.5	79.7	48.0	77.3	90	70.0	84	49	61	67
	70BLC	69	Lab.	14	Cold	64C	5	11	49.0	54.5	6.8	6-30	7-10 12.0	79.7	48.0	77.3	90	70.5	86	49	66	7.72
	70BMC	69	Lab.	14	Cold	64C	5	11	49.0	54.5	6.8	6-30	7-7 7.0	79.7	48.0	76.7	90	69.9	86	49	66	7.65
Raspberry - Red.....	72AMH	71	H. P.	10	Hot	63H	6	18	45.8	53.1	7.6	6-30	7-6 6.0	79.7	74.6	76.8	90	68.9	86	49	65	3.66
	72AOH	71	H. P.	10	Hot	63H	6	18	45.8	53.1	7.6	6-30	7-14 14.0	62.0	57.0	59.2	90	71.6	92	49	70	9.67
	72BLH	71	H. P.	14	Hot	11H	5	15	53.1	61.1	8.4	6-30	7-7 6.5	79.7	74.6	76.6	90	68.9	86	49	66	7.66
	72BOH	71	H. P.	14	Hot	11H	5	15	53.1	61.1	8.4	6-30	7-15 15.0	62.0	57.0	57.2	90	72.0	92	49	71	5.68
	72ALC	71	H. P.	10	Cold	62C	5	15	45.2	52.5	7.7	6-30	7-4 4.0	79.7	76.4	77.8	90	71.6	92	49	57	4.4
	72AMC	71	H. P.	10	Cold	62C	5	15	45.2	52.5	7.7	6-30	7-8 8.0	61.0	57.0	59.0	90	74.0	86	49	61	8.67
	72BLC	71	H. P.	14	Cold	64C	5	15	51.6	58.7	7.4	6-30	7-5 4.5	79.7	75.2	77.3	90	70.0	84	49	65	0.87
	72BMC	71	H. P.	14	Cold	64C	5	15	51.6	58.7	7.4	6-30	7-11 11.0	61.0	57.0	59.1	90	70.7	86	49	61	8.67

CHART II—Continued.

FRUIT	Number	From Concentrate Number	Brand	Benzoin	Formula of Sugar Syrup		Formula of Pre- pared Fruits		Sugars				Moulds		Temperature of Fruits			Weather		
					Weight, lbs.	Process	Number	Conc. Fruit, Ozs	Sugar Syrup, Ozs	Sucrose, %	Approx. Sucrose Added, %	Invert Sugar, %	Date Prepared	Days Salable	Max. um.	Minimum	Mean.	Temperature.	Humidity.	
																			Max.	Min.
Sunshine, %.																				

Chocolate	74ALH	73	J. H. S.	10	Hot.	63H	4	12	52	6.53	7	1.17	6	7-21	15.0	78.4	47.0	76.5	73.4	90	92	82	70.4	74
	74AMH	73	J. H. S.	10	Hot.	63H	4	12	52	6.53	7	1.17	6	7-17	11.0	78.4	47.0	76.5	73.5	90	92	82	70.4	69
	74BLH	73	J. H. S.	14	Hot.	11H	4	12	61	3.62	3	1.07	6	7-22	15.5	78.4	47.0	76.4	73.5	90	92	83	70.4	73
	74BMH	73	J. H. S.	14	Hot.	11H	4	12	61	3.62	3	1.07	6	7-17	11.0	78.4	47.0	76.4	73.5	90	92	83	70.4	70
	74ALC	73	J. H. S.	10	Cold	62C	5	15	52	0.53	1	1.17	6	7-15	9.0	78.4	48.0	76.2	73.3	90	92	83	73.5	83
	74AMC	73	J. H. S.	10	Cold	62C	5	15	52	0.53	1	1.17	6	7-12	6.0	78.4	48.0	76.2	73.3	90	92	83	73.5	83
	74BLC	73	J. H. S.	14	Cold	64C	4	12	57	4.58	6	1.27	6	7-19	13.0	78.4	48.0	76.2	73.6	90	92	82	72.6	71
	74BMC	73	J. H. S.	14	Cold	64C	4	12	57	4.58	6	1.27	6	7-15	9.0	78.4	47.0	76.3	73.2	90	92	82	72.6	71
Chocolate	76BMH	75	Bishop	14	Hot.	11H	8	12	45	2.61	0.16	4.7	7	7-15	8.5	78.4	75.2	76.5	74.4	90	92	82	76.3	69
	76BOH	75	Bishop	14	Hot.	11H	8	12	45	2.61	0.16	4.7	7	7-26	19.0	62.0	56.0	59.2	72.4	90	92	82	67.9	73
	76BMC	75	Bishop	14	Cold	64C	8	12	42	6.58	5.16	6.7	7	7-14	7.5	78.4	75.2	76.4	74.0	90	92	82	76.7	68
	76BXC	75	Bishop	14	Cold	64C	8	12	42	6.58	5.16	6.7	7	7-21	14.0	62.0	57.0	58.9	73.1	90	92	83	69.3	79
	78BLH	77	Bishop	14	Hot.	11H	8	12	42	7.52	5.10	4.7	7	7-15	8.0	78.4	48.0	76.4	74.4	90	92	82	76.3	69
Logan Berries	78BMH	77	Bishop	14	Hot.	11H	8	12	42	7.52	5.10	4.7	7	7-20	13.0	78.4	75.2	76.4	73.1	90	92	82	76.2	77
	78BOH	77	Bishop	14	Hot.	11H	8	12	42	7.52	5.10	4.7	7	7-14	7.0	78.4	48.0	76.4	74.0	90	92	82	76.7	68
	78BLC	77	Bishop	14	Cold	64C	8	12	39	9.48	9.10	5.7	7	7-14	6.5	78.4	47.0	76.4	74.0	90	92	82	76.7	68
	78BMC	77	Bishop	14	Cold	64C	8	12	39	9.48	9.10	5.7	7	7-17	10.0	62.0	57.0	58.6	74.3	90	92	82	72.9	74
	78BXC	77	Bishop	14	Cold	64C	8	12	39	9.48	9.10	5.7	7	7-17	10.0	62.0	57.0	58.6	74.3	90	92	82	72.9	74
	82ALH	82	J. H. S.	10	Hot.	81H	6	12	32	1.42	6.10	9.7	10	7-20	10.5	78.4	47.0	76.9	73.3	90	92	84	71.7	64
	82AMC	82	J. H. S.	14	Hot.	81H	6	12	32	1.42	6.10	9.7	10	7-15	5.5	78.4	47.0	76.9	73.3	90	92	84	82.2	77
	83BLH	82	J. H. S.	14	Hot.	11H	6	12	44	6.56	2.10	4.7	10	7-20	10.0	78.4	47.0	76.9	73.1	90	92	84	71.7	69
Cherries	83BMH	82	J. H. S.	14	Hot.	11H	6	12	44	6.56	2.10	4.7	10	7-17	7.5	78.4	48.0	76.9	74.9	90	92	84	79.1	69
	83ALC	82	J. H. S.	10	Cold	76C	6	12	37	2.47	7.11	0.7	10	7-17	6.5	78.4	45.0	76.9	74.9	90	92	84	79.2	73
	83AMC	82	J. H. S.	10	Cold	76C	6	12	37	2.47	7.11	0.7	10	7-15	5.5	78.4	45.0	76.9	74.9	90	92	84	79.2	73
	83BLC	82	J. H. S.	14	Cold	87C	6	12	43	3.53	6.10	7.7	10	7-19	9.0	78.4	48.0	76.9	75.3	90	92	84	82.2	65
	83BMC	82	J. H. S.	14	Cold	87C	6	12	43	3.53	6.10	7.7	10	7-16	6.0	78.4	48.0	76.9	75.3	90	92	84	82.2	65

Strawberries	96ALH	94	Bishop	10	Hot	93H	8	10	39	6	56	9	17	8	7	20	15	5	—	80	9	47	0	76	7	83	72	41	88	54	68	4	73		
	96AMH	94	Bishop	10	Hot	93H	8	10	39	6	56	9	17	8	7	20	15	5	—	78	0	75	0	76	7	83	72	41	88	54	68	4	73		
	96BLH	94	Bishop	10	Hot	93H	8	10	39	6	56	9	17	7	14	7	20	15	5	—	80	9	47	0	76	7	83	72	41	88	54	68	4	73	
	96BMH	94	Bishop	14	Hot	84H	8	10	44	6	61	5	17	5	14	7	25	15	0	—	78	0	74	3	76	2	80	73	5	81	54	69	4	74	
	96ALC	94	Bishop	10	Cold	79C	8	10	39	6	56	9	17	7	14	7	26	13	5	—	78	0	47	0	76	2	80	73	5	81	54	69	4	74	
	96AMC	94	Bishop	10	Cold	79C	8	10	39	6	56	9	17	7	14	7	26	13	5	—	78	0	47	0	76	2	80	73	5	81	54	69	4	74	
	96BLC	94	Bishop	10	Cold	79C	8	10	39	6	56	9	17	7	14	7	26	13	5	—	78	0	47	0	76	2	80	73	5	81	54	69	4	74	
	96BMC	94	Bishop	14	Cold	80C	8	10	44	6	61	5	17	5	14	7	28	14	0	—	78	0	47	0	76	2	80	73	5	81	54	69	4	74	
	97ALH	96	Leb.	10	Hot	93H	8	8	28	3	32	8	5	7	17	7	22	8	5	—	77	5	47	0	76	0	82	71	5	70	54	58	7	75	
	97AMH	96	Leb.	10	Hot	93H	8	8	28	3	32	8	5	7	17	7	22	8	5	—	77	5	47	0	76	0	82	71	5	70	54	58	7	75	
Strawberries	97BLH	96	Leb.	10	Hot	93H	8	8	33	1	37	6	5	6	17	7	21	4	5	—	77	0	47	0	76	0	82	70	6	70	54	58	7	75	
	97BMH	96	Leb.	10	Hot	93H	8	8	33	1	37	6	5	6	17	7	21	4	5	—	77	0	47	0	76	0	82	70	6	70	54	58	7	75	
	97ALC	96	Leb.	10	Cold	79C	8	8	28	2	32	2	5	17	7	22	2	4	0	—	77	5	47	0	76	0	82	71	5	70	54	58	7	75	
	97AMC	96	Leb.	10	Cold	79C	8	8	28	2	32	2	5	17	7	22	2	4	0	—	77	5	47	0	76	0	82	71	5	70	54	58	7	75	
	97BLC	96	Leb.	10	Cold	79C	8	8	28	2	32	2	5	17	7	22	2	4	0	—	77	5	47	0	76	0	82	71	5	70	54	58	7	75	
	97BMC	96	Leb.	14	Cold	80C	8	8	33	0	37	0	5	0	7	17	7	22	3	5	—	77	5	47	0	76	0	82	71	5	70	54	58	7	75
	98BLH	98	Bishop	14	Hot	84H	7	14	63	8	0	0	0	0	7	24	8	11	8	0	—	80	9	48	5	76	5	92	73	4	88	54	72	2	57
	98BMH	98	Bishop	14	Hot	84H	7	14	63	8	0	0	0	0	7	24	8	11	8	0	—	80	9	48	5	76	5	92	73	4	88	54	72	2	57
	98BLC	98	Bishop	14	Cold	80C	7	14	63	7	0	0	0	0	7	24	8	11	8	0	—	80	9	48	5	76	5	92	73	4	88	54	72	2	57
	98BMC	98	Bishop	14	Cold	80C	7	14	63	7	0	0	0	0	7	24	8	11	8	0	—	80	9	48	5	76	5	92	73	4	88	54	72	2	57
Pineapple	101BLH	100	Bishop	14	Hot	104H	8	8	45	4	64	3	19	8	8	6	8	17	11	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	101BMH	100	Bishop	14	Hot	104H	8	8	45	4	64	3	19	8	8	6	8	17	11	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	101BLC	100	Bishop	14	Cold	106C	8	8	43	7	62	8	19	9	8	6	8	14	7	5	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	101BMC	100	Bishop	14	Cold	106C	8	8	43	7	62	8	19	9	8	6	8	14	7	5	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	103BLH	102	Bishop	14	Hot	104H	7	9	49	5	58	2	9	1	8	6	8	14	7	5	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	103BMH	102	Bishop	14	Hot	104H	7	9	49	5	58	2	9	1	8	6	8	14	7	5	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	103BLC	102	Bishop	14	Cold	106C	7	9	47	6	56	3	9	2	8	6	8	13	4	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	103BMC	102	Bishop	14	Cold	106C	7	9	47	6	56	3	9	2	8	6	8	13	4	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	112BLH	111	J. H. S.	14	Hot	104H	6	12	48	9	63	9	6	8	6	8	13	7	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81	
	112BMH	111	J. H. S.	14	Hot	104H	6	12	48	9	63	9	6	8	6	8	13	7	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81	
Peaches	112BOH	111	J. H. S.	14	Hot	104H	6	12	48	9	63	9	6	8	6	8	13	7	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81	
	112BLC	111	J. H. S.	14	Cold	106C	6	12	46	6	55	8	9	6	8	6	8	12	6	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	112BMC	111	J. H. S.	14	Cold	106C	6	12	46	6	55	8	9	6	8	6	8	12	6	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	112BOC	111	J. H. S.	14	Cold	106C	6	12	46	6	55	8	9	6	8	6	8	12	6	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	112PLC	111	J. H. S.	•	Cold	106C	6	12	47	3	58	4	9	5	8	6	8	15	9	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	112PMC	111	J. H. S.	•	Cold	106C	6	12	47	3	58	4	9	5	8	6	8	15	9	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	110BLH	109	H. P.	14	Hot	119H	8	16	51	7	55	7	4	1	8	12	8	17	5	5	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	110BMH	109	H. P.	14	Hot	119H	8	16	51	7	55	7	4	1	8	12	8	17	5	5	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	110BLC	109	H. P.	14	Hot	119H	8	16	49	6	53	7	4	1	8	12	8	16	6	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
	110BMC	109	H. P.	14	Cold	106C	8	16	49	6	53	7	4	1	8	12	8	16	6	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81
110BOC	109	H. P.	14	Cold	106C	8	16	49	6	53	7	4	1	8	12	8	16	6	0	—	80	6	49	0	79	3	91	77	2	92	52	73	5	81	
Strawberries	96ALH	94	Bishop	10	Hot	93H	8	10	39	6	56	9	17	8	7	20	15	5	—	80	9	47	0	76	7	83	72	41	88	54	68	4	73		
	96AMH	94	Bishop	10	Hot	93H	8	10	39	6	56	9	17	8	7	20	15	5	—	78	0	75	0	76	7	83	72	41	88	54	68	4	73		
	96BLH	94	Bishop	10	Hot	93H	8	10	39	6	56	9	17	7	14	7	20	15	5	—	80	9	47	0	76	7	83	72	41	88	54	68	4	73	
	96BMH	94	Bishop	14	Hot	84H	8	10	44	6	61	5	17	5	14	7	25	15	0	—	78	0	74	3	76	2	80	73	5	81	54	69	4	74	
	96ALC	94	Bishop	10	Cold	79C	8	10	39	6	56	9	17	7	14	7	26	13	5	—	78	0	47	0	76	2	80	73	5	81	54	69	4	74	
	96AMC	94	Bishop	10	Cold	79C	8	10	39	6	56	9	17	7	14	7	26	13	5	—	78	0	47	0	76	2	80	73	5	81	54	69	4	74	
	96BLC	94	Bishop	10	Cold	79C	8	10	39	6	56	9	17	7	14	7	26	13	5	—	78	0	47	0	76	2	80	73	5	81	54	69	4	74	
	96BMC	94	Bishop	14	Cold	80C	8	10	44	6	61	5	17	5	14	7	28	14	0	—	78	0	47	0	76	2	80	73	5	81	54	69	4	74	
	97ALH	96	Leb.	10	Hot	93H	8																												

CHART II—Continued.

FRUIT.	Number.	From Concentrate Number	Brand.	Bottle.	Formula of Sugar Syrup.			Formula of Prepared Fruits.			Temperature of Fruits.			Weather.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
					Weight, lbs.	Process.	Number.	Conc. Fruit, Oza.	Sugar Syrup, Oza.	Sugars.			Maximum.	Minimum.	Mean.	Humidity.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
										Sucrose, %.	Approx. Sucrose Added, %.	Invert Sugar, %.				Date Prepared.	Date Fermentation.	Days Suitable.	Moulds.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Peaches.	122BLH.	121	J. H. S.	—	14	Hot.	119H	7	14	46.8	58.8	10.4	8.12	8-19	7.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

†No fermentation detected.

*Syrup made by cold percolation.

CONCENTRATED FRUIT SYRUPS. CHART III.

SYRUP.	Number.	Brand.	Benzoate..	Polariscope Readings.			Specific Gravity 20°C.	Sugars.				Cause of Disposal.	Mould.	Days Good.	Where Kept.	Temperature of Syrup.		
				Temperature °C.		Invert.		Sucrose %.	Approx. Sucrose Added %.	Invert Sugar %.	Date Opened.					Date Disposal.	Maximum.	Minimum.
				Direct.	Invert.													
Lemon.	14	J. H. S.	+	1 286 25 0	+ 60 20	- 19 25	61 0	63 8	2 7 4 8	5 28	Discont.	—	51	Refrig.	48 7 38 7	44 7		
Lemon.	16	J. H. S.	+	1 277 25 0	+ 59 10	- 18 32	59 9	62 6	2 7 4 8	5 28	Discont.	—	51	Refrig.	48 7 38 7	44 7		
Pineapple	18	J. H. S.	+	1 320 23 0	+ 44 60	- 21 12	50 3	70 0	20 5 4	14 6 1	Discont.	—	49	Refrig.	48 7 38 7	45 2		
Pineapple	20	J. H. S.	+	1 330 24 5	+ 47 00	- 21 56	52 6	70 8	19 3 4	12 6 1	Discont.	—	51	Refrig.	48 7 38 7	45 3		
Peach.	35	J. H. S.	+	1 301 23 0	+ 43 20	- 19 56	47 8	62 8	15 5 5	26 8 5	Discont.	—	71	Refrig.	52 5 42 0	48 5		
Peach.	37	J. H. S.	+	1 301 23 0	+ 43 20	- 19 56	46 5	60 3	14 1 5	26 8 5	Discont.	—	71	Refrig.	52 5 42 0	48 5		
Cherry	39	J. H. S.	—	1 351 23 0	+ 23 60	- 17 52	51 3	57 1	26 6 5	26 8 19	Discont.	—	85	Refrig.	52 5 42 0	49 0		
Strawberry	53	J. H. S.	—	1 265 24 0	+ 10 00	- 16 50	30 2	53 8	35 0 8	10 8 9	Ferment.	—	77	Refrig.	55 0 42 0	49 6		
Raspberry.	56	J. H. S.	—	1 338 24 0	+ 5 00	- 21 30	31 4	62 4	32 2 6	10 8 9	Discont.	—	60	Refrig.	52 5 42 0	49 2		
Strawberry.	58	J. H. S.	—	1 342 24 5	+ 22 00	- 20 14	31 4	62 4	32 2 6	10 8 9	Discont.	—	70	Refrig.	52 5 42 0	49 6		
Pineapple.	85	J. H. S.	—	1 327 24 5	+ 22 70	- 20 24	40 5	66 5	27 0 7	12	All used.	—	—	—	—	—		
Peach.	87	J. H. S.	—	1 366 24 3	+ 13 40	- 18 70	24 6	61 4	38 7 12	—	All used.	—	—	—	—	—		
Pineapple	89	Bishop	—	1 223 24 5	+ 15 30	- 14 41	22 7	47 3	25 6 7	12	All used.	—	—	—	—	—		
Pineapple	91	J. H. S.	—	1 330 24 5	+ 43 90	- 20 76	49 6	68 3	19 7 12	8 26	All used.	—	—	—	—	—		
Strawberry	113	Bishop	—	1 256 27 0	+ 5 80	- 12 90	14 6	44 2	18 4 8	10 8 26	All used.	—	—	—	—	—		
Cherry	115	H. P.	—	1 340 27 0	+ 20 80	- 12 60	25 9	43 2	18 4 8	10 8 26	Discont.	—	17	Refrig.	55 0 48 0	51 5		
Raspberry	117	J. H. S.	—	1 282 27 0	+ 14 60	- 11 50	20 2	39 4	20 2 8	10 8 26	Discont.	—	17	Refrig.	55 0 48 0	51 5		

FRUIT SYRUPS PREPARED FOR DISPENSING. CHART IV.

Key to column No. 2:

D = 16 lbs. syrup.

C = Cold process syrup.

H = Hot process syrup.

A = 10 lbs. syrup.

B = 14 lbs. syrup.

SYRUP.	Number.	From Concentrate Number.	Brand.	Benzoate.	Weight Lbs.	Process.	Sugar Syrup.		Formula of Fruit Syrup.		Polariscope Readings.			Sugars.			Temperature of Syrups °F.						
							Number.	Conc. Fruit Syrup, Oas.	Sugar Syrup, Oas.	Fruit Acid, Oas.	Specific Gravity 20°C.	Temp. °C.	Direct.	Invert.	Sucrose %.	Invert Sugar %	Approximate Sucrose Added %.	Date Prepared.	Date Fermentation.	Days Salable.	Maximum.	Minimum.	Mean.
Lemon	15AC	14	J. H. S.	—	10	Cold	3C	6	24	†	1.258 25.0	+52.50	-17.38	53.7	4.1 57.6	4.1 57.6	4.1 57.6	8-5-23*	50	61.3 53.1	56.9	56.9	
	15AH	14	J. H. S.	—	10	Hot	2H	6	24	†	1.275 25.0	+55.60	-18.37	56.8	4.1 60.9	4.1 60.9	4.1 60.9	8-5-23*	50	61.3 53.1	56.9	56.9	
	15DC	14	J. H. S.	—	16	Cold	1C	6	24	†	1.315 25.0	+62.70	-20.46	63.9	4.1 67.8	4.1 67.8	4.1 67.8	8-5-23*	50	61.3 53.1	56.9	56.9	
Lemon	17AC	16	J. H. S.	+	10	Cold	3C	6	24	†	1.256 25.0	+52.80	-17.27	53.8	3.4 57.2	3.4 57.2	3.4 57.2	8-5-24*	46	61.3 53.1	56.8	56.8	
	17AH	16	J. H. S.	+	10	Hot	2H	6	24	†	1.271 25.0	+55.30	-18.15	56.4	3.8 60.1	3.8 60.1	3.8 60.1	8-5-24*	46	61.3 53.1	56.8	56.8	
	17DC	16	J. H. S.	+	16	Cold	1C	6	24	†	1.314 25.0	+63.30	-20.35	64.3	3.4 67.4	3.4 67.4	3.4 67.4	8-5-24*	46	61.3 53.1	56.8	56.8	
Pineapple	19AH	18	J. H. S.	+	10	Hot	2H	6	24	†	1.280 25.0	+52.70	-15.92	55.0	8.0 62.7	8.0 62.7	8.0 62.7	4-13-5-20*	37	59.5 53.1	56.4	56.4	
	19BC	18	J. H. S.	+	14	Cold	6C	6	24	†	1.325 25.0	+57.20	-20.46	59.6	8.3 67.8	8.3 67.8	8.3 67.8	4-13-5-20*	37	59.5 53.1	56.4	56.4	
	19DC	18	J. H. S.	+	16	Cold	1C	6	24	†	1.322 25.0	+60.50	-21.23	62.7	7.6 70.3	7.6 70.3	7.6 70.3	4-13-5-20*	37	59.5 53.1	56.4	56.4	
Pineapple	21AC	20	J. H. S.	—	10	Cold	3C	6	24	†	1.268 25.0	+50.10	-18.15	52.4	8.0 60.1	8.0 60.1	8.0 60.1	4-12-4-25	13	59.0 55.4	57.1	57.1	
	21AH	20	J. H. S.	—	10	Hot	2H	6	24	†	1.282 25.0	+53.20	-18.51	55.3	8.0 62.3	8.0 62.3	8.0 62.3	4-12-5-8	26	59.5 54.1	56.7	56.7	
	21DC	20	J. H. S.	—	16	Cold	1C	6	24	†	1.325 25.0	+59.30	-21.12	61.7	8.3 70.0	8.3 70.0	8.3 70.0	4-12-5-20	37	59.5 53.1	56.4	56.4	
Peach	33AC	35	J. H. S.	—	10	Cold	25C	8	16	...	1.272 23.0	+51.00	-18.48	52.9	6.4 59.3	6.4 59.3	6.4 59.3	5-20-6-10	15	61.7 56.8	59.1	59.1	
	33BC	35	J. H. S.	—	14	Cold	6C	8	16	...	1.306 23.0	+58.80	-21.12	60.9	7.1 67.5	7.1 67.5	7.1 67.5	5-20-6-25	30	56.6 56.8	61.1	61.1	
	33C	37	J. H. S.	+	10	Cold	25C	8	16	...	1.273 23.0	+50.70	-18.59	52.8	7.1 59.6	7.1 59.6	7.1 59.6	5-20-6-28	23	65.6 56.8	60.8	60.8	
Peach	38AC	37	J. H. S.	+	14	Cold	6C	8	16	...	1.306 23.0	+55.70	-20.46	58.0	7.7 65.6	7.7 65.6	7.7 65.6	5-20-7-5	40	65.6 56.8	61.1	61.1	
	40AC	39	H. P.	—	10	Cold	25C	8	16	...	1.284 23.0	+44.00	-18.04	47.3	11.1 57.8	11.1 57.8	11.1 57.8	5-20-6-21	26	63.8 56.8	60.1	60.1	
	40BC	39	H. P.	—	14	Cold	6C	8	16	...	1.316 23.0	+49.80	-19.58	52.7	10.4 62.8	10.4 62.8	10.4 62.8	5-20-6-24	29	65.6 56.8	60.5	60.5	

Strawberry	54AC 54BH	53 53	J. H. S. J. H. S.	— —	10 14	Cold Hot	55C 11H	8 8	24 24	1 258.24.0 + 40.60 1.308.24.0 + 40.40	17.38.44.3 12.7.56.6 6-10.6-25 20.02.53.8 11.6.65.2 6-10.7-19	15 65.659.0.62.2 39 65.659.0.62.4
Raspberry	57AC 57BH	56 56	H. P. H. P.	— —	10 14	Cold Hot	55C 11H	6 6	24 24	1 275.24.0 + 20.00 1.327.24.0 + 40.60	17.82.43.4 15.1.58.1 6-10.6-25 20.08.63.7 14.0.67.4 6-10.6-28	15 65.659.0.62.2 18 65.659.0.62.3
Strawberry	59AC 59BH	58 58	H. P. H. P.	— —	10 14	Cold Hot	55C 11H	6 6	24 24	1 270.24.0 + 27.00 1.328.24.0 + 47.60	17.38.41.6 15.8.56.6 6-10.6-25 20.02.51.7 14.0.65.2 6-10.6-30	15 65.659.0.62.2 20 65.659.0.62.3
Pineapple	86AH 86BH	85 85	H. P. H. P.	— —	10 14	Hot Hot	81H 84H	12 26 12 26	26 26	1 287.25.5 + 47.70 1.310.25.5 + 51.90	17.93.50.5 9.8.59.9 7-12.7-27 19.25.54.7 9.8.64.3 7-12.7-30	15 66.562.0.63.2 18 70.062.0.64.1
Peach	88AH 88BH	87 87	J. H. S. J. H. S.	— —	10 14	Hot Hot	81H 84H	14 30 14 30	30 30	1 284.25.5 + 42.60 1.307.25.5 + 48.50	17.71.46.4 13.3.59.2 7-12.7-24 19.36.52.2 13.0.64.7 7-12.7-28	12 66.562.0.63.1 16 67.562.0.63.4
Pineapple	90AH 90BH	89 89	Bishop Bishop	— —	10 14	Hot Hot	81H 84H	8 5 23.5 8 5 23.5	23.5 23.5	1 257.25.5 + 45.00 1.282.25.5 + 40.00	16.50.47.3 8.0.55.1 7-13.7-24 18.04.52.3 8.0.60.3 7-13.7-20	11 66.562.0.63.0 13 66.562.0.63.1
Pineapple	92AH 92BH	91 91	J. H. S. J. H. S.	— —	10 14	Hot Hot	81H 84H	12 36 12 36	36 36	1 285.25.5 + 52.50 1.310.25.5 + 46.90	18.26.54.4 6.6.61.0 7-12.7-27 19.69.58.9 7.0.65.8 7-12.7-30	15 66.562.0.63.2 18 70.062.0.64.1
Strawberry	114AH 114BH	113 113	Bishop Bishop	— —	10 14	Hot Hot	120H 119H	8 24 8 24	24 24	1 285.26.5 + 42.80 1.307.26.5 + 42.30	16.72.45.9 11.1.56.7 8-10.8-20 18.81.54.9 9.6.63.9 8-10.8-22	10 70.764.4.67.0 12 70.763.5.66.6
Cherry	116AH 116BH	115 115	H. P. H. P.	— —	10 14	Hot Hot	105H 104H	12 36 12 36	36 36	1 287.26.5 + 47.00 1.325.26.5 + 53.00	17.05.49.6 9.3.57.9 8-9.8-19 19.25.55.8 10.0.65.4 8-9.8-22	10 71.064.7.67.6 13 71.063.5.66.9
Raspberry	118AH 118BH	117 117	J. H. S. J. H. S.	— —	10 14	Hot Hot	105H 104H	12 36 12 36	36 36	1 277.26.5 + 43.80 1.314.26.5 + 40.60	16.72.46.8 10.7.56.8 8-9.8-21 18.92.52.9 11.8.64.3 8-9.8-23	12 71.063.5.66.9 14 71.063.5.66.9

*No fermentation detected; sample discontinued.

SUGAR SYRUPS. CHART V.

Number.	Formula.		Process.	Sp. G. 25° C.	Sugar %.	Sugar Lbs. per Gal. Syrup.	De- grees Brix.	Date Pre- par'd.	Date Dis- posal.	Cause of Disposal.	Kind of Mould.	Where Kept.	Kind of Water Used in Prepa- ration of Syrup.
	Sugar Lbs.	Water, Gals.											
1C	16	1	Cold	1.325	66.2	7.32	67.1	3-26					Distilled.
2H	10	1	Hot.	1.272	57.3	6.08	56.8	3-27					Distilled.
3C	10	1	Cold	1.252	53.7	5.61	53.3	3-26	4-13	Mould.	Penicillium.	Refrig.	Distilled.
4C	12	1	Cold	1.278	58.3	6.21	58.0	3-26				Refrig.	Distilled.
5C	10	1	Cold	1.240	51.6	5.34	51.3	3-26				Refrig.	Distilled.
6C	14	1	Cold	1.304	62.8	6.83	62.4	3-26				Room.	
7*	14	1	Cold	1.329	66.3	7.24	66.6	3-26				Room.	Distilled.
10H	12	1	Hot.	1.296	61.7	6.51	61.1	3-31				Room.	Distilled.
11H	14	1	Hot.	1.324	66.6	7.36	65.8	4-1				Room.	Distilled.
12H	16	1	Hot.	1.338	68.5	7.64	67.9	4-2				Room.	Distilled.
25C	10	1	Cold	1.258	54.8	5.75	54.6	5-6				Room.	Distilled.
26C	12	1	Cold	1.284	59.1	6.33	59.0	5-6				Room.	Distilled.
45C	14	1	Cold	1.301	62.2	6.75	63.6	5-29				Room.	Distilled.
46C	10	1	Cold	1.260	55.3	5.81	55.0	5-29				Room.	Distilled.
55C	10	1	Cold	1.256	54.2	5.68	54.3	6-10				Room.	Distilled.
62C	10	1	Cold	1.255	54.5	5.67	54.0	6-29	7-3	Mould.	Penicillium.	Room.	Boiled tap.
63H	10	1	Hot.	1.262	55.3	5.82	55.2	6-29	7-4	Mould.	Penicillium.	Room.	Tap.
64C	14	1	Cold	1.305	62.6	6.81	62.5	6-29	7-4	Mould.	Penicillium.	Room.	Boiled tap.
84H	14	1	Hot.	1.308	63.1	6.88	63.0	7-9	8-5	Mould.	Penicillium.	Room.	Tap.
93H	10	1	Hot.	1.263	54.8	5.77	55.3	7-14				Room.	Tap.
104H	14	1	Hot.	1.321	66.0	7.27	65.2	8-5	8-10			Room.	Tap.
105H	10	1	Hot.	1.273	57.9	6.15	57.1	8-5				Room.	Tap.
106C	14	1	Cold	1.303	62.9	6.84	62.2	8-5				Room.	Boiled tap.
107C	10	1	Cold	1.258	55.7	5.84	54.5	8-5				Room.	Boiled tap.
108C†	.....	.....	Cold	1.331	66.5	7.38	66.8	8-5				Room.	Distilled.
119H	14	1	Hot.	1.325	65.6	7.25	65.8	8-10				Room.	Tap.
120H	10	1	Hot.	1.270	56.7	6.00	56.6	8-10				Room.	Tap.

*Rock Candy Syrup purchased of a local house.

†Made by percolation.

INCREASE OF ACIDITY AND ALCOHOL CONTENT OF FOUNTAIN SYRUPS FROM TIME OF PREPARATION FOR
THE FOUNTAIN UNTIL FERMENTATION HAS CEASED. CHART VI.

Average Temperature of Syrups about 22° C. Acidity as OC of $\frac{N}{10}$ KOH per 100 Grams of Syrup. Alcohol per cent. by weight.

KIND AND NUMBER OF SYRUP.	DAYS.																
	7-12	4	8	12	16	19	22	26	30	33	37	41	45	49	53	57	61
Pineapple. 86 AH.	0.0	3.0	3.0	3.0	11.0	17.0	0.73	1.80	2.18	2.45	2.45	2.45	2.45	2.45	3.37	3.74	3.63
Pineapple. 86 BH.	0.0	5.0	1.0	2.0	3.0	7.0	12.0	0.59	1.20	1.55	1.55	1.55	1.55	1.55	2.31	2.86	2.83
Peach. 88 AH.	0.0	0.0	1.0	0.0	0.0	12.0	14.0	1.37	1.68	2.45	2.45	2.45	2.45	2.45	2.45	2.25	3.24
Peach. 88 BH.	0.0	0.0	0.0	0.0	0.0	9.0	11.0	0.53	0.86	1.06	1.06	1.06	1.06	1.06	1.06	1.24	1.24
Pineapple. 90 AH.	0.0	1.0	0.0	1.0	12.0	13.0	17.0	1.83	1.37	1.37	1.37	1.37	1.37	1.37	2.31	1.68	1.68
Pineapple. 90 BH.	0.0	2.0	2.0	3.0	12.0	16.0	18.0	25.0	28.0	30.7	33.5	35.0	35.0	35.0	39.5	40.5	1.62
Pineapple. 92 AH.	0.0	2.0	3.0	5.0	12.0	16.0	16.0	0.73	1.68	1.68	1.68	1.68	1.68	1.68	2.06	2.79	2.99
Pineapple. 92 BH.	0.0	2.0	0.0	2.0	9.0	15.0	18.0	0.40	1.24	1.55	1.55	1.55	1.55	1.55	2.31	2.72	2.99
Strawberry. 114 AH.	0.0	2.0	0.0	2.0	9.0	15.0	18.0	0.79	1.24	22.7	22.5	21.5	24.0	23.5	25.5	25.0	23.0
Strawberry. 114 BH.	0.0	2.0	0.0	2.0	9.0	15.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.59	3.50	4.02
Cherry. 116 AH.	0.0	2.0	0.0	2.0	9.0	15.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.43	2.12	2.72
Cherry. 116 BH.*	0.0	2.0	0.0	2.0	9.0	15.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.06	2.72	3.11
Raspberry. 118 AH.	0.0	2.0	0.0	2.0	9.0	15.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.24	1.31	1.80
Raspberry. 118 BH.	0.0	2.0	0.0	2.0	9.0	15.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.18	1.55	1.74
Raspberry. 118 BH.	0.0	2.0	0.0	2.0	9.0	15.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06	1.62	1.68

*Fermentation not yet complete.

COMPARISON OF THE KEEPING QUALITIES OF FRUITS PREPARED
WITH SUGAR SYRUPS OF DIFFERENT WEIGHTS AND PROC-
ESSES OF PREPARATION; THE SAMPLES COMPARED BEING
EXPOSED SIMULTANEOUSLY. CHART VII.

Weight and Process of Preparation of Sugar Syrup.	Room Temp. 16 Hrs. Refriz. Temp. 8 Hrs.				Room Temp. 24 Hrs.				Fountain Temp. 24 Hrs.			
	Total Samples.	Days Salable.			Total Samples.	Days Salable.			Total Samples.	Days Salable.		
		Max.	Min.	Mean.		Max.	Min.	Mean.		Max.	Min.	Mean.
10 lbs. Cold.....	8	12.5	4.5	7.3	10	7.5	3.5	4.2	2	8.0	7.5	7.7
10 lbs. Hot.....	8	15.5	4.5	9.8	10	11.0	3.0	6.0	2	14.0	7.0	10.5
10 lbs. Cold.....	15	12.5	4.5	8.2	14	7.5	2.5	4.7	8	14.0	8.0	11.9
14 lbs. Cold.....	15	14.0	5.5	10.2	14	9.0	3.0	6.0	8	18.0	11.0	14.5
10 lbs. Hot.....	7	15.5	4.5	10.5	8	11.0	3.0	6.6	1	14.0	14.0	14.0
14 lbs. Hot.....	7	20.0	4.5	12.3	8	11.0	3.0	7.3	1	15.0	15.0	15.0
14 lbs. Cold.....	15	14.0	5.5	8.4	18	9.0	3.0	5.5	6	14.0	6.0	10.2
14 lbs. Hot.....	15	20.0	4.5	9.7	18	11.0	3.0	6.4	6	19.0	6.5	12.2

WEATHER CONDITIONS AND AVERAGE DAILY TEMPERATURE OF
FRUIT AND SYRUP RECEPTACLES, ROOM AND REFRIG-
ERATOR. CHART VIII.

DATE.	Syrup Jars.	Fruit Jars.	Refrig- erator.	Room.	WEATHER.					
					Temperature.			Humid- ity.	Sun- shine %	Rain- fall.
					Max.	Min.	Mean.			
April.										
8.....	59.0	58.0	48.0	73.0	46	32	39	69	63	T
9.....	59.4	57.0	48.0	72.0	40	26	33	54	71	T
10.....	61.3	56.0	47.3	70.3	39	25	32	60	68	0
11.....	57.2	55.0	47.0	70.7	61	31	46	45	100	0
12.....	59.0	56.0	48.3	71.2	66	53	60	51	86	.10
13.....	57.7	54.7	47.7	68.0	53	34	44	71	33	.54
14.....	55.4	52.7	45.3	70.2	51	33	44	69	100	0
15.....	56.6	54.3	45.3	68.3	63	38	50	70	66	0
16.....	58.5	55.3	47.3	72.1	74	53	64	63	73	0
17.....	57.7	54.5	47.0	69.8	78	53	66	65	100	0
18.....	58.1	55.0	48.0	69.8	79	59	69	59	79	0
19.....	57.7	55.7	48.7	71.1	67	45	56	70	0	.09
20.....	58.1	54.7	47.7	71.6	49	41	45	87	0	.23
21.....	59.0	55.7	48.0	72.1	67	46	56	87	39	.09
22.....	57.6	53.7	45.3	71.1	53	43	48	68	42	0
23.....	56.6	52.7	44.3	69.8	50	38	44	49	99	0
24.....	55.9	52.0	43.0	69.0	63	35	49	52	100	0
25.....	55.4	52.0	43.0	68.9	72	48	60	62	72	0
26.....	54.9	50.7	41.7	68.5	65	33	52	72	77	0
27.....	55.4	52.3	43.0	69.8	61	41	51	71	39	.46
28.....	54.5	51.3	44.7	68.5	52	37	44	62	37	.01
29.....	59.5	56.7	47.3	73.9	78	50	64	68	30	.38
30.....	59.5	56.3	46.7	73.0	61	41	51	68	1	.22
May.										
1.....	58.1	52.7	46.3	71.6	41	34	38	61	3	T
2.....	54.5	52.0	44.0	68.0	50	35	42	47	77	.08
3.....	54.1	50.7	43.0	69.4	52	39	46	78	19	.16
4.....	54.5	50.0	42.3	66.7	66	41	54	71	34	.02
5.....	55.0	52.7	43.7	70.2	82	50	66	73	100	0
6.....	56.8	54.3	44.3	73.0	81	56	68	82	75	1.16
7.....	54.1	50.7	41.3	68.5	65	48	56	60	100	0
8.....	57.2	53.0	42.0	69.8	72	49	60	80	53	1.23
9.....	55.4	53.0	42.0	68.0	62	44	53	96	0	.21
10.....	53.2	49.7	39.0	66.7	53	41	47	93	30	.04
11.....	53.1	48.3	38.7	67.5	61	37	49	66	100	0
12.....	54.5	50.3	41.3	68.3	70	47	58	79	100	0
13.....	55.9	52.3	42.7	71.1	70	56	63	73	12	.18

CHART VIII—Continued.

DATE.	Syrup Jars.	Fruit Jars.	Refrigerator.	Room.	WEATHER.					
					Temperature.			Humidity.	Sun- shine %	Rain- fall.
					Max.	Min.	Mean.			
May (Cont.)										
14.	58.1	53.7	43.7	73.1	79	58	68	71	49	T
15.	58.5	54.7	44.3	71.6	78	58	68	75	49	.51
16.	57.2	54.0	46.0	68.0	72	54	63	75	100	0
17.	57.6	54.3	45.3	70.2	73	52	62	60	100	0
18.	56.7	53.7	44.7	69.4	74	50	62	57	100	0
19.	56.3	52.3	42.7	68.3	68	52	60	59	73	0
20.	55.8	52.3	42.7	70.3	65	52	58	75	0	T
21.	57.6	53.7	44.0	71.2	66	56	61	74	12	0
22.	57.2	54.0	44.0	77.7	73	51	62	61	99	0
23.	56.3	54.0	45.0	69.8	73	53	63	49	79	0
24.	56.7	54.0	44.5	69.4	69	55	62	64	34	.02
25.	56.3	54.0	44.0	68.9	61	54	58	75	70	.82
26.	59.5	57.7	46.7	72.5	70	59	64	99	1	.73
27.	59.0	56.0	46.0	72.5	71	61	66	71	73	T
28.	56.8	53.7	43.3	71.2	74	58	66	68	88	0
29.	58.5	54.0	47.0	70.7	76	58	67	73	64	T
30.	57.3	54.0	46.0	70.7	77	64	70	78	31	.45
31.	58.1	57.0	47.0	70.7	79	64	72	88	41	.30
June.										
1.	59.0	56.3	46.0	72.1	79	61	70	73	71	0
2.	58.6	55.0	45.0	72.1	72	66	69	85	13	.01
3.	59.5	55.5	46.0	72.5	77	62	70	87	26	.46
4.	59.0	55.7	45.2	73.4	75	63	69	81	40	.13
5.	58.6	55.0	45.5	72.5	82	62	72	62	98	0
6.	58.0	58.0	46.0	71.6	85	65	75	60	95	0
7.	61.7	58.0	47.7	75.2	86	69	78	69	70	0
8.	61.3	58.3	47.0	76.1	83	63	73	92	52	.10
9.	59.5	59.5	46.3	78.3	81	65	73	79	48	.05
10.	61.7	59.0	49.0	76.5	79	66	72	79	52	.05
11.	63.0	58.0	48.3	77.0	78	62	70	66	79	0
12.	63.0	56.0	47.0	76.1	81	63	72	78	53	1.03
13.	62.6	60.0	50.0	75.2	80	63	72	84	57	.10
14.	61.7	57.0	49.5	74.3	77	55	66	74	83	0
15.	59.9	54.3	44.7	73.0	72	49	60	68	100	0
16.	61.3	55.0	45.5	74.3	78	57	68	68	81	0
17.	63.8	57.3	47.6	74.5	79	59	69	69	63	.89
18.	59.5	53.5	44.0	72.5	71	54	62	66	100	0
19.	59.0	53.0	42.0	70.1	79	55	67	80	100	0
20.	60.8	55.0	47.0	71.6	86	58	72	58	89	0
21.	62.6	56.3	46.3	72.6	74	67	70	42	19	.17
22.	62.0	56.0	47.0	74.6	84	67	76	78	76	0
23.	64.3	59.7	49.5	77.0	84	70	77	81	59	T
24.	65.6	58.6	49.6	78.5	86	64	75	90	81	.92
25.	63.5	58.5	50.5	78.8	87	66	76	76	87	.68
26.	63.8	59.5	50.5	77.3	85	67	76	78	79	.21
27.	62.0	61.0	52.0	78.8	87	69	78	86	70	.41
28.	63.0	60.3	50.6	77.5	89	72	80	73	97	0
29.	63.0	60.5	48.5	77.9	89	70	80	72	100	0
30.	62.0	60.5	49.5	77.5	87	64	76	56	100	0
July.										
1.	62.0	53.6	49.3	77.5	90	66	78	49	100	0
2.	62.5	60.0	49.3	79.7	88	67	78	55	100	.05
3.	63.0	61.0	50.0	77.9	74	59	66	67	77	0
4.	63.5	59.5	50.5	76.4	76	55	66	60	81	T
5.	63.0	60.0	51.0	75.2	68	57	62	84	3	.88
6.	61.3	57.3	48.3	74.6	66	57	62	86	4	.63
7.	61.5	57.5	48.5	75.2	79	61	70	76	54	.03
8.	61.2	57.0	48.0	75.5	84	63	74	52	100	0
9.	62.6	58.0	49.0	77.0	85	64	74	66	84	0
10.	62.5	59.0	51.0	77.0	82	68	75	79	84	0
11.	63.0	61.0	52.0	75.2	77	68	72	86	24	.98
12.	64.8	62.0	51.6	78.4	84	66	75	92	21	1.54
13.	62.3	59.0	49.6	76.2	85	67	76	86	79	.01
14.	62.2	58.3	48.6	76.4	83	68	76	69	95	0
15.	62.6	59.0	49.0	78.0	85	71	78	81	82	.04
16.	62.3	60.0	48.3	77.3	82	66	74	61	100	0
17.	62.0	60.0	48.0	76.1	82	64	73	54	100	0
18.	62.5	62.0	50.0	77.0	81	61	71	70	67	.11
19.	62.0	59.6	48.6	75.5	77	56	66	57	100	0
20.	63.0	58.5	47.0	75.5	80	60	70	54	90	0
21.	63.6	59.0	47.6	76.6	84	62	73	57	100	0
22.	66.5	61.5	49.0	77.5	84	68	76	70	58	.09
23.	64.0	58.6	48.0	75.5	77	59	68	62	69	0
24.	63.0	56.0	48.5	74.3	78	55	66	54	84	0

CHART VIII—Continued.

DATE.	Syrup Jars.	Fruit Jars.	Refrig- erator.	Room.	WEATHER.					
					Temperature.			Humid- ity.	Sun- shine %	Rain- fall.
					Max.	Min.	Mean.			
July (Cont.)										
25	64.0	60.0	49.0	74.3	82	60	71	62	65	0
26	62.8	58.3	49.0	73.7	73	65	69	69	2	.01
27	63.2	58.5	49.0	73.4	76	62	69	88	9	0
28	67.5	61.0	50.5	75.7	90	70	80	78	90	0
29	70.7	63.5	52.5	80.9	91	67	79	76	72	.79
30	69.0	63.0	52.0	79.1	92	69	80	76	85	0
31	69.0	63.0	51.5	77.9	77	69	73	81	3	.26
August.										
1	69.5	62.5	52.0	77.3	88	63	74	66	99	0
2	69.5	62.5	52.0	77.3	88	66	77	68	75	0
3	69.5	62.0	50.5	78.2	84	68	76	70	79	0
4	70.5	62.0	51.0	79.7	84	70	77	78	30	.03
5	69.5	62.5	51.0	78.8	88	70	79	70	100	0
6	67.5	61.0	50.0	77.9	85	67	76	61	100	0
7	67.0	60.5	49.5	77.9	87	65	76	66	99	0
8	67.0	63.0	52.0	80.6	91	69	80	58	99	0
9	71.0	64.0	52.2	79.7	90	71	80	73	73	T
10	70.0	63.5	52.5	79.7	87	70	78	68	75	0
11	66.0	61.0	49.0	79.1	84	63	74	64	85	.07
12	66.0	63.0	51.5	80.0	88	67	78	86	45	1.13
13	68.0	62.5	52.0	79.7	82	72	77	83	42	.06
14	67.0	63.0	51.0	80.6	89	71	80	84	100	0
15	70.7	63.0	52.5	80.6	89	70	80	83	88	.30
16	68.4	64.5	55.0	80.6	89	67	78	70	96	0
17	66.5	62.5	52.5	78.8	77	62	70	74	93	0
18	65.3	61.0	50.0	78.8	79	62	70	70	99	0
19	64.7	61.0	50.5	79.1	84	59	72	69	93	0
20	64.4	60.0	49.0	80.6	79	59	69	64	100	0
21	63.5	60.0	50.0	75.2	77	53	65	60	100	0
22	66.2	62.0	51.0	75.2	80	56	68	56	99	0
23	67.1	64.0	51.0	77.3	84	60	72	52	100	0
24	65.6	62.0	52.0	79.1	88	65	76	...	100	0
25	67.1	63.0	53.0	79.1	86	68	77	...	68	.60
26	67.1	64.0	53.0	78.8	87	69	78	...	66	.29

REPORT OF SANITARY INSPECTIONS.

The most noteworthy advance in food legislation recorded during the past year has been the passage of sanitary food laws by a number of the states. These food laws are modeled after a bill drawn up by a committee of food commissioners who had had experience in the sanitary control of food producing and distributing establishments. It is to the credit of Indiana that her legislature was the first state in the Union to place this bill upon her statute books. The bill as enacted is as follows:

THE SANITARY FOOD LAW OF 1909.

(Chapter 163, Acts 1909. Approved March 8, 1909.)

Title. An Act providing for the sanitation of bakeries, canneries, packing houses, slaughter-houses, dairies, creameries, cheese factories, confectioneries, restaurants, hotels, groceries, meat markets, and all other food producing establishments, manufactories or other places where food is prepared, manufactured, packed, stored, sold or distributed, and vehicles in which food is placed for transportation; regulating the health of operatives, employes, clerks, drivers and all other persons working on the premises who handle the material from which food is prepared or the finished product; defining food, regulating the wholesomeness of food manufactured, prepared, packed, stored, sold, distributed or transported; defining the duties of the state board of health and the state food and drug commissioner; providing penalties for the violation thereof, and repealing acts in conflict therewith.

Food Defined. Section 1. Be it enacted by the General Assembly of the State of Indiana, That every building, room, basement, or cellar occupied or used as a bakery, confectionery, cannery, packing house, slaughter-house, dairy, creamery, cheese factory, restaurant, hotel, grocery, meat market or other place or apartment used for the preparation for sale, manufacture, packing, storage, sale or distribution of any food, shall be properly lighted, drained, plumbed and ventilated and conducted with strict regard to the influence of such condition upon the health of the operatives, employes, clerks or other persons therein employed and the purity and wholesomeness of the food therein produced; and for the purpose of this act the term "food" as used herein, shall include all articles used for food, drink, confectionery or condiment, whether simple, mixed or compound and all substances or ingredients used in the preparation thereof.

Unsanitary Conditions—What Constitutes. Sec. 2. The floors, sidewalks, ceilings, furniture, receptacles, implements and machinery of every establishment or place where food is manufactured, packed, stored, sold or distributed, and all cars, trucks and vehicles used in the transportation of food products, shall at no time be kept in an unclean, unhealthful or unsanitary condition, and for the purpose of this act, unclean, unhealthful or unsanitary conditions shall be deemed to exist if food in the process of manufacture, preparation, packing, storing, sale, distribution or transportation is not securely protected from flies, dust, dirt, and, as far as may be necessary by all reasonable means from all other foreign or injurious contamination; and if the refuse, dirt and the waste products subject to decomposition and fermentation incident to the manufacture, preparation, packing, storing, selling, distributing and transporting of food, are not removed daily; and if all trucks, trays, boxes, baskets, buckets and other receptacles, chutes, platforms, racks, tables, shelves and all knives, saws, cleavers and other utensils and machinery used in moving, handling, cutting, chopping, mixing, canning and all other processes are not thoroughly cleaned daily, and if the clothing of operatives, employes, clerks or other persons therein employed is unclean.

Floors, Walls and Ceilings. Sec. 3. The side walls and ceilings of every bakery, confectionery, creamery, cheese factory, hotel and restaurant kitchen, shall be plastered, wainscoted or ceiled with metal or lumber and shall be oil painted or kept well lime washed, and all interior woodwork in every bakery, confectionery, creamery, cheese factory, hotel and restaurant kitchen, shall be kept well oiled or painted with oil paints and be kept washed clean with soap and water; and every building, room, basement or cellar occupied or used for the preparation, manufacture, packing, storage, sale or distribution of food, shall have an impermeable floor made of cement or tile laid in cement, brick, wood or other suitable non-absorbent material which can be flushed and washed clean with water.

Screens. Sec. 4. The doors, windows and other openings of every food producing or distributing establishment during the fly season shall be fitted with self-closing screen doors and wire window screens of not coarser than 14 mesh wire gauze.

Toilets. Sec. 5. Every building, room, basement or cellar occupied or used for the preparation, manufacture, packing, canning.

sale or distribution of food, shall have convenient toilet or toilet rooms separate and apart from the room or rooms where the process of production, manufacture, packing, canning, selling or distributing is conducted. The floors of such toilet rooms shall be of cement, tile, wood, brick or other nonabsorbent material and shall be washed and scoured daily. Such toilet or toilets shall be furnished with separate ventilating flues or pipes, discharging into soil pipes, or on the outside of the building in which they are situated. Lavatories and washrooms shall be adjacent to toilet rooms and shall be supplied with soap, running water and towels, and shall be maintained in a sanitary condition. Operatives, employes, clerks and all persons who handle the material from which the food is prepared, or the finished product, before beginning work or after visiting toilet or toilets, shall wash their hands and arms thoroughly in clean water.

Cuspidors. Sec. 6. Cuspidors for the use of operatives, employes, clerks or other persons shall be provided whenever necessary, and each cuspidor shall be thoroughly emptied and washed out daily with disinfectant solution and five ounces of such a solution shall be left in each cuspidor while it is in use. No operative, employe or other person shall expectorate on the floor or sidewalls of any building, room, basement or cellar where the production, manufacture, packing, storing, preparation, or sale of any food is conducted.

Living in Workrooms. Sec. 7. No person or persons shall be allowed to live or sleep in any workroom of a bakeshop, kitchen, dining room, confectionery, creamery, cheese factory or place where food is prepared for sale, served or sold.

Diseased Persons. Sec. 8. No employer shall require, permit or suffer any person to work, nor shall any person work, in a building, room, basement, cellar or vehicle occupied or used for the production, preparation, manufacture, packing, storage, sale, distribution and transportation of food, who is affected with any venereal disease, smallpox, diphtheria, scarlet fever, yellow fever, tuberculosis or consumption, bubonic plague, Asiatic cholera, leprosy, trachoma, typhoid fever, epidemic dysentery, measles, mumps, German measles, whooping cough, chicken pox or any other infectious or contagious disease.

Enforcement of Law. Sec. 9. It shall be the duty of the State Board of Health to enforce this act, and for that purpose the state,

county, city and town health officers shall be food inspectors subordinate to the State Board of Health. The State Food and Drug Commissioner, the food inspectors of the State Board of Health, the state, county, city and town health officers shall have full power at all times to enter every building, room, basement, or cellar occupied or used or suspected of being occupied or used for the production for sale, manufacture for sale, storage, sale, distribution or transportation of food, and to inspect the premises and all utensils, fixtures, furniture and machinery used as aforesaid, and if upon inspection any food producing or distributing establishment, conveyance, employer, operative, employe, clerk, driver or other person is found to be violating any of the provisions of this act, or if the production, preparation, manufacture, packing, storing, sale, distribution or transportation of food is being conducted in a manner detrimental to the health of the employes and operatives or to the character or quality of the food therein being produced, manufactured, packed, stored, sold, distributed or conveyed, the officer or inspector making the examination or inspection shall furnish evidence of said violation to the prosecuting attorney of the county or circuit wherein such violations occur, who shall prosecute all persons violating any of the provisions of this act, or said inspector shall report such conditions and violations to the State Food and Drug Commissioner, who shall issue an order to the person or persons in authority at the aforesaid establishment to abate the condition or violation or to make such improvements as may be necessary to abate them, within a period of five days or such reasonable time as may be required in which to abate them. Such order shall be in writing and the person receiving the order shall have the power of appeal from the order and instructions, and may within five days from the issuance of the order appear in person or by attorney before the State Food and Drug Commissioner to give reason why such order or instructions should not be obeyed.

Penalties. Sec. 10. Any person who violates any of the provisions of this act or who refuses to comply with any lawful orders or requirements of the State Food and Drug Commissioner duly made in writing as provided in section 9 of this act, shall be guilty of a misdemeanor and on conviction shall be punished for the first offense by a fine of not less than \$10.00 nor more than \$50.00; for the second offense by a fine of not less than \$50.00 nor more than \$100.00, and for the third and subsequent offense by a fine of \$200.00 and imprisonment in the county jail for not less than 30

nor more than 90 days, and each day after the expiration of the time limit for abating unsanitary conditions and completing improvements to abate such conditions as ordered by the State Food and Drug Commissioner, shall constitute a distinct and separate offense.

Sec. 11. All acts and parts of acts in conflict with the provisions of this statute are hereby repealed.

* * *

As the food inspectors continue their work in enforcing the laws we find their widest field for usefulness in the regulation of sanitary conditions. Food adulteration, while still a menace to health and property, is far less common than before the food laws were enacted. But the question of production and distribution of clean food has as yet received only slight attention by those engaged in this important business. If it were advisable to compare the dealer who adulterates his sugar or spices with inert material and his neighbor who carefully meets every legal requirement of food standards, but who maintains a dirty, filthy store, who has an unsanitary refrigerator, no toilet conveniences, a foul cellar, and who displays his stocks of dried fruits, confectionery, bakery goods, cheese, butter, etc., uncovered on the counters, we must reach the inevitable conclusion that insofar as their practices may injure public health, the dirty grocer is far more guilty than the dishonest grocer. The business men of Indiana who are engaged in the manufacture and distribution of food are on the whole to be warmly congratulated upon the stand that they have taken in favor of cleanliness. It is only the occasional dealer who permits unsanitary conditions to exist in his store. It is only the ignorant, naturally dirty restaurant keeper who maintains a filthy kitchen. While sanitary conditions are yet far from acceptable, they have greatly improved during the last year, and the sentiment among the trade in favor of clean business is so pronounced that it is but a question of time until the dirty grocer, meat man or baker will be forced to the wall, not alone because he is a poor business man, but because his competitor who observes the rule of cleanliness will secure the trade of every observant housewife.

A noticeable fact in the sanitary inspection of food-producing establishments is the increased percentage of places classed as good, and the lessened number of places graded as poor and bad on sec-

ond and third inspections, making it apparent that the visit of food inspectors is followed by decidedly improved conditions. The grocer who is advised in a friendly way to clean up his storeroom, wash his windows, remove spittoons and dust his stock in trade, if he is an intelligent man, is quick to see the advantage to his business of following the suggestions of the inspector. The butcher, when the dampness, mould and bad odor of his refrigerator is pointed out to him, usually wonders why he did not notice the unsanitary condition himself, and after the visit made by the inspector introduces into his business more careful attention to the details which produce cleanliness.

In order to determine how much improvement in sanitary conditions follows the visit of the inspector, four of the regular inspectors were instructed to visit for three consecutive months twenty-five business houses, including meat markets, grocery stores, hotels and restaurants, drug stores and such other food producing establishments as they might see fit to inspect. The results of each inspection have been tabulated in terms of percentage based upon the score of 100 as being the highest score possible of attainment. The inspectors followed their usual method of reporting sanitary conditions as excellent, good, fair, poor and bad, and the percentages have been calculated from these reports. The improvement in conditions is shown by the results of the second and third inspections, which are in most instances very marked.

Inspector Bruner visited 18 meat markets, which on first inspection showed a score of 59.7 and on third scored 81.1. Inspector Owens scored 5 meat markets 58 on first inspection, 76 on second inspection and 82 on third inspection. Inspector Tucker, who visited 15 meat markets, noted an improvement of 10 points. Inspector Cohn, who visited 10 hotels and restaurants, noted an improvement of 14 points. Inspector Tucker showed an improvement of 22 points. A study of the table given below shows plainly that the inspection work is of great value and that the results obtained are permanent in character. No grocer or butcher who, perhaps against his will, cleans his shop thoroughly to conform to the sanitary food law will, if he is a competent business man, allow slipshod methods and uncleanness again to be a rule in his store.

RESULTS OF INSPECTORS' WORK.

(Improvement Noted in Percentages.)

INSPECTOR.	Meat Markets.				Grocery Stores.			
	No.	Inspections.			No.	Inspections.		
		First.	Second.	Third.		First.	Second.	Third.
Bruner.....	18	59.7	77.8	81.1	4	76.2	82.5	82.5
Owens.....	5	58.0	76.0	82.0	2	40.0	55.0	65.0
Cohn.....	4	75.0	80.0	76.5	4	72.5	80.0	85.0
Tucker.....	15	70.3	76.7	80.1	4	67.5	72.5	80.0

INSPECTOR.	Hotels and Restaurants.				Drug Stores.			
	No.	Inspections.			No.	Inspections.		
		First.	Second.	Third.		First.	Second.	Third.
Bruner.....	1	40.0	60.0	60.0	3	76.7	88.3	91.7
Owens.....	11	57.7	59.5	63.2	6	75.8	79.1	84.2
Cohn.....	10	66.0	76.0	80.0	3	68.3	73.3	76.7
Tucker.....	3	60.0	66.7	81.7				

INSPECTOR.	Miscellaneous.			
	No.	Inspections.		
		First.	Second.	Third.
Bruner.....	2	72.5	85.0	85.0
Owens.....	4	40.0	56.2	67.2
Cohn.....	1	60.0	85.0	85.0
Tucker.....				

During the year the inspectors have visited 253 cities and towns and made a sanitary inspection of 7,878 business places engaged in the production and distribution of food and drugs. In addition to this number of first inspections, 272 second inspections and 245 third inspections were made during the year, making the total number of inspections 8,395. On the first inspection 258 places were reported as being in excellent condition, 4,007 establishments were in good condition, 2,791 were reported as fair, 682 as poor and 140 as bad.

Twice as many grocery stores were visited as any other class of business houses. Of 2,566 inspections reported 125 stores were so cleanly, well ventilated, screened, lighted and admirably conducted as to warrant their classification as excellent, 1,376 places were found to be in good condition, 906 were in fair shape, 137 poor and 22 bad. Of 1,355 meat markets inspected, 30 were classed as excellent, 783 good, 461 fair, 74 poor and 7 bad. Of 1,143 inspections of hotels and restaurants, 16 only were reported to be in

excellent sanitary condition, 376 were in good condition, 540 were fair, 185 were poor, and 26 were bad. The monthly reports always show the sanitary condition of hotels and restaurants to be decidedly more unsatisfactory than that of any other class of food establishments. The kitchens are inadequate and unclean, the provisions are of inferior grade, the ice boxes are dirty, slimy and foul smelling, and the employes frequently unclean and diseased. Of the 1,022 bakeries and confectioneries visited, 38 were in excellent condition, 508 were rated as good, 370 fair, 91 poor and 15 were in bad condition. Nine hundred and eighty-five drug stores were inspected during the year, 38 of which were in excellent condition, 719 were good, 185 fair, 34 poor and 9 bad. But one of the 122 slaughter houses visited was in excellent sanitary condition, 31 were in good shape, 41 fair, 33 poor, and 16, or 13 per cent. of the entire number, so unsanitary that they could only be classed as bad.

Fifty-four poultry houses were inspected and not a single establishment was found to be in excellent condition, 8 were rated as good, 24 fair, 10 poor, and 13, or 22 per cent., were bad in every respect. The condition of the establishments where poultry is dressed and prepared for market is very unsatisfactory. The business is usually conducted in a dilapidated structure, not provided with proper facilities for sewage disposal and water supply. The rooms are poorly lighted, unventilated except by broken windows and cracks in the walls, and during fly season swarm with millions of flies. Two hundred and ninety-one dairies were visited, only 3 of which were reported as being in excellent condition, 59 were in good condition, 115 were in fair shape, 88 were poor and 26 were bad. The State Board of Health has adopted a system of scoring dairies adopted by the U. S. Department of Agriculture, and their sanitary condition will hereafter be expressed in numerical terms readily understood by the dairymen.

Other inspections included visits to fish markets, creameries, ice cream factories, milk depots, canning factories, bottling works, cold storage plants, commission houses, pharmaceutical companies, breweries, pickle and vinegar factories and flour mills. A special report is made of the canning factory inspections.

SUMMARY OF INSPECTIONS.

INSPECTIONS.	Number Inspected.	Number Excellent.	Number Good.	Number Fair.	Number Poor.	Number Bad.
Dairies.....	291	3	59	115	88	26
Grocery stores.....	2,566	125	1,378	906	137	22
Meat markets.....	1,355	30	783	461	74	7
Drug stores.....	985	38	719	185	34	9
Bakeries and confectioneries.....	1,022	13	508	370	91	15
Hotels and restaurants.....	1,143	1	378	540	185	26
Slaughter-houses.....	122	1	31	41	33	16
Fish markets.....	59	1	20	31	5	2
Creameries.....	33	0	20	11	0	0
Poultry houses.....	54	0	8	24	10	12
Ice cream factories.....	30	0	4	11	5	0
Milk depots.....	20	0	50	50	6	0
Canning factories.....	107	1	10	13	5	1
Bottling works.....	31	0	8	1	0	0
Cold storage plants.....	9	0	3	8	3	0
Commission houses.....	14	0	3	0	0	0
Pharmaceutical companies.....	3	0	2	1	0	0
Breweries.....	3	0	0	2	0	1
Pickle and vinegar factories.....	3	0	1	1	2	2
Bakery wagons.....	6	0	16	3	0	0
Flour mills.....	19	0	2	0	0	0
Cigar manufacturers.....	3	1				
Number of first inspections.....	7,878	258	4,007	2,791	682	140
Number of second inspections.....	272	9	150	91	22	0
Number of third inspections.....	245	11	169	50	13	2
Total number of inspections.....	8,395	278	4,326	2,932	717	142

ALBION, NOBLE COUNTY—

Seven inspections were made. Three groceries, 1 meat market, and 3 drug stores were all found to be in good condition.

AMBOY, MIAMI COUNTY—

Two inspections were made. One creamery and 1 canning factory were visited and found in fair shape.

ANGOLA, STEUBEN COUNTY—

Of 3 dairies visited 1 was found good, 1 fair and 1 poor. Three grocery stores, 2 meat markets and 1 drug store were visited and found in good condition. One poultry house was visited and found in fair shape. One slaughter house was visited and found to be in bad condition.

ARCADIA, HAMILTON COUNTY—

Eleven inspections were made. Five groceries, 2 drug stores, 1 bakery and confectionery and 2 hotels and restaurants were found in fair condition. One meat market was found good and 1 fair.

ARGOS, MARSHALL COUNTY—

Of 7 groceries inspected 3 were found good, 3 fair and the grocery owned by C. E. Alleman & Co., was found to be in excellent condition. Two meat markets were found good and 2 fair. Of 4 drug stores visited, 3 were found good and 1 fair. One bakery was found fair. One restaurant was found good and 3 fair.

ATLANTA, HAMILTON COUNTY—

Three groceries were found in good shape and 1 fair. Two meat markets and 2 restaurants were found to be in fair shape. Two drug stores were found good. One bakery was found fair. Orders were given to white-wash walls and ceiling.

ATTICA, FOUNTAIN COUNTY--

Seven inspections were made. One grocery was found good and 1 fair. One hotel owned by the Lithia Springs Co., was inspected and found in excellent condition. Two restaurants were found fair. One confectionery owned by C. A. Eolston was found in excellent condition. One bottling works was found in fair shape.

AUBURN, DEKALB COUNTY--

One dairy was inspected and found in a very bad condition, having no light or ventilation. The milk house was covered with cobwebs, and was used for domestic purposes. The dairy was condemned until made sanitary. Three groceries were found good and 1 fair. The groceries owned by Albert Zirweo and F. P. Thomas were found to be in excellent condition. Two meat markets were found good and 2 fair. One fish market was found to be in fair shape. Three drug stores were found in good condition. Of 4 bakeries and confectioneries visited, 2 were found good and 2 fair. One restaurant was good, 1 fair and the restaurant owned by Hood & Frich was in excellent condition.

Two second inspections were made. The grocery stores owned by Hebel Bros. and M. E. Garrett were found to be in excellent condition.

AURORA, DEARBORN COUNTY--

Thirty-nine first inspections were made. Of 16 grocery stores inspected, 11 were found good, 4 fair and 1 poor, being in an unclean and unsanitary condition. Two meat markets were found good and 1 was found fair. Two drug stores were found good and 2 fair. Of 11 bakeries and confectioneries visited, 7 confectioneries and 2 bakeries were found in good condition, while 2 confectioneries were rated fair. Of 4 hotels and restaurants visited, 1 restaurant was found good, 1 fair and 1 poor. One hotel was found in fair shape. One ice cream parlor was inspected and found in fair shape.

One drug store was visited on the second inspection and found in good shape.

On the third inspection, 1 grocery store, 1 drug store, and 1 restaurant were visited and found in good condition.

AUSTIN, SCOTT COUNTY--

One grocery store was found in good condition and the grocery store owned by J. S. Morgan & Son was found in excellent condition. Two canning factories were found in good condition.

AVILLA, NOBLE COUNTY--

One grocery store and 1 meat market were visited and found in good shape. One drug store was found fair.

BATESVILLE, RIPLEY COUNTY--

Twenty-one inspections were made during the year. Of 3 dairies visited 2 were found fair and 1 poor. Notice was given that radical improvements must be made or a new barn must be built. Of 7 grocery stores visited, 3 were found fair, 3 good and the grocery store owned by Henry Kramer was found to be in excellent condition. One meat market was found in good condition. Three drug stores were found good. Two hotels were

found in fair shape. Of 5 bakeries and confectioneries visited, 3 confectioneries were found good, 1 bakery good and 1 bakery poor. The slaughterhouse owned by Michael Benz was found to be in excellent condition.

BATTLE GROUND, TIPPECANOE COUNTY—

Six inspections were made. Three grocery stores were found fair, 1 meat market poor, 1 drug store good and 1 restaurant poor.

BEDFORD, LAWRENCE COUNTY—

Seventy-four inspections were made. Of 3 dairies inspected 1 was found fair, 1 was condemned on account of very unsanitary conditions and the dairy owned by the Pine Hall Dairy Co. was found to be in excellent condition. Of 22 groceries inspected, 19 were found good, 2 fair and the grocery store owned by K. W. Owen & Son was found to be in excellent condition. Ten meat markets, 7 drug stores and 1 bottling works were found to be in good shape. One slaughter house was good and 2 fair. Of 10 bakeries and confectioneries inspected, 8 were found good and 2 fair. Two poultry houses were found to be in fair shape. Of 10 hotels and restaurants visited, 9 were found good, 6 fair and 1 poor, being poorly lighted, not ventilated and very unclean.

BENNETT'S SWITCH, MIAMI COUNTY—

Two groceries were visited and found in fair condition.

BICKNELL, KNOX COUNTY—

Fifteen inspections were made. Of 7 grocery stores visited 6 were found fair and 1 poor. Notice was given to clean up back room and back yard. One meat market was found fair and 1 bad. Notice was given to clean up at once. Two drug stores and 2 restaurants were found in good condition. One bakery and confectionery was found good and 1 confectionery was found fair.

BIRDSEYE, DUBOIS COUNTY—

Eleven inspections were made. One grocery store and 1 milling company were visited and found in good condition. Two drug stores, 1 hotel, 3 restaurants, 1 confectionery were visited and found in fair condition. One canning factory was found fair. Notice was given to screen toilet and repair floor.

BLOOMFIELD, GREENE COUNTY—

Of the 15 grocery stores visited, 5 were found good, 5 fair, 3 poor, and 2 bad being very unclean and unsanitary. Two meat markets were rated good, 1 fair and 1 poor. Notice was given to clean up at once. Seven drug stores were visited and found in good condition while 1 was rated fair. Of six bakeries and confectioneries visited, 4 were found fair, 1 poor and 1 bad, which was closed until made sanitary. Two restaurants were found fair and 2 poor. Notice was given to clean up at once.

BLOOMINGDALE, PARKE COUNTY—

Five of the 7 grocery stores visited were found in fair shape. One was found poor and 1 bad being closed until sanitary. One meat market was rated fair. Two drug stores were visited and 1 was found poor and 1 bad, which was condemned and closed until made sanitary. One bakery was found in poor shape. One restaurant was found good, 1 fair and 1 poor.

BLOOMINGTON, MONROE COUNTY—

Of the 12 dairies visited 3 were found in good condition, 2 fair, 4 poor and 3 bad. Three of the dairies were closed on account of unclean and unsanitary conditions. At 1 dairy instructions were given to put in new windows, new floors, new gutters and remove manure, whitewash barns and separate the horses from the cows. Nine grocery stores were found in good condition. The grocery stores owned by Collins & Freadway, W. O. Blakely & Sons and Wick's Department store were found in excellent condition. Five meat markets were found good. The drug store owned by W. T. Bowles was found to be in excellent condition. Six drug stores were found in good condition. Of 7 bakeries and confectioneries inspected, 5 were found good, 1 poor and the confectionery owned by Geo. C. Poolitsan was found to be in excellent condition. The hotel owned by the Bowles Hotel Company was found in excellent condition. Two restaurants were found in good shape, 2 fair and 1 poor. One bottling works was visited and found in good condition. One ice house was visited and ordered closed, having rotten floors, sidewalls and ceilings.

BOONVILLE, WARRICK COUNTY—

Thirty-seven inspections were made. Of 14 groceries visited 8 were found good, 5 fair and 1 poor. Two meat markets were found good and 2 fair. Two slaughter houses were rated fair. Three drug stores, 3 bakeries and confectioneries and 1 canning factory were visited and found in good condition. Two hotels were found good and 1 fair. Four restaurants were found fair. One poultry house and 2 lunch carts were inspected and found in fair shape.

BORDEN, CLARK COUNTY—

Ten inspections were made. Five grocery stores were visited and found in good condition. One meat market was found in a very unclean and unsanitary condition. One drug store was found good and 1 fair. One confectionery and 1 hotel were visited and found to be in fair condition.

BOSWELL, BENTON COUNTY—

One grocery was found good, 1 fair and 1 poor. Two meat markets and 1 bakery and confectionery were found in fair shape. One drug store was found good and 1 fair. One restaurant was found good and 1 fair.

BOURBON, MARSHALL COUNTY—

Three groceries were found good, and 1 fair. Two meat markets were found in good shape. One drug store was found good and 1 fair. One bakery was found in fair condition. Of 5 hotels and restaurants visited, 1 was found good, 3 fair and 1 poor, being unclean.

BRAZIL, CLAY COUNTY—

Seventy-seven inspections were made. The creamery owned by the Sanitary Creamery Company was visited and found in excellent condition. Four dairies were visited and 2 were found good, 1 fair and 1 poor. Notice was given to close the dairy until it was thoroughly cleaned up. Of 23 grocery stores visited, 5 were found good, 15 fair, 2 poor and the grocery store owned by A. W. Shaffer was in excellent condition. One milk depot was found in good shape. Two meat markets were found good, 4 fair, 1 poor and the meat market owned by Jones and Company was found to be in

excellent condition. Two fish markets were condemned and closed until made sanitary. One ice cream factory was found good, 1 fair and 1 poor. Eight drug stores were visited, 1 was found good, 6 fair and 1 poor. Of 10 bakeries visited, 2 were found good, 6 fair, 1 poor and 1 bad, being very unsanitary. One confectionery was found in good condition and the confectionery owned by Maxine Jones was found to be in excellent condition. Of 15 hotels and restaurants visited, 2 were found good, 6 fair, 6 poor and 1 bad, being very unsanitary.

BREMEN, MARSHALL COUNTY—

Thirteen inspections were made. Three groceries were found good, 3 fair and the grocery owned by J. Frank Wine was in excellent condition. One meat market was found in fair shape. Two drug stores were found good. One bakery was found good and 1 bakery and confectionery fair. One restaurant was found to be in fair shape.

BRIDGEPORT, MARION COUNTY—

One dairy was visited and found in good condition.

BROOKSTON, WHITE COUNTY—

Nine inspections were made. One grocery store was found good and 1 fair. The meat market owned by Myers & Son was visited and found in excellent condition. One was found in fair shape. One drug store was found good and one poor. Notice was given to clean floors and shelves. One restaurant and 1 bakery was found in poor shape. Notice was given to clean up at once. One bakery was found in good condition.

BROWNSTOWN, JACKSON COUNTY—

Six groceries and 3 drug stores were found to be in good condition. One meat market was found fair. One slaughter house was found in poor condition and was ordered closed until orders were complied with. One restaurant was found good, 1 hotel fair and the restaurant owned by Wm. Phifer was found in excellent condition.

BRUCEVILLE, KNOX COUNTY—

One drug store was visited and found to be in an unclean condition. The goods were unclean and not up to date.

BUNKER HILL, MIAMI COUNTY

Five grocery stores and 2 meat markets were found in good condition. Two grocery stores and 2 meat markets were found in fair shape. Five drug stores were found good and 1 was found fair. Two bakeries and 1 confectionery were visited and found in fair shape. One restaurant was found good and 3 fair. One slaughter house was visited and found in fair shape. The walls needed whitewashing, the floors were not water tight and the odor was very offensive. One canning factory was found in poor shape. Twenty pounds of meat were condemned.

BURROWS, CARROLL COUNTY—

Four grocery stores were visited and 1 was found good, 2 fair and 1 poor. One restaurant was found fair.

BUTLER, DEKALB COUNTY—

Thirty-nine inspections were made. Of 4 dairies inspected, 2 were found fair and 2 poor. Six grocery stores were found good and 1 fair.

Two meat markets were rated good and 2 fair. Six drug stores were found to be in good condition. Of 6 bakeries and confectioneries visited, 1 confectionery and 3 bakeries were found in good condition, 1 confectionery fair and 1 bakery poor. The bake shop needs whitewashing, the stove and floors are covered with tobacco spit. General conditions poor. Three restaurants were found good and 5 fair. One ice cream and butter factory were inspected and found in fair shape. Two slaughter houses were found in good condition and 1 poor. The place needs a new killing room and the hide room needs to be removed from the killing room. The premises in general should be given a thorough cleaning.

CAMPBELLSBURG, WASHINGTON COUNTY—

Of 4 grocery stores visited, 3 were found good and 1 fair. Two meat markets, 1 ice cream factory and 1 slaughter house were visited and found in fair shape. Two drug stores, 1 poultry house and 1 canning company were visited and found in good condition. Of 3 restaurants visited, 2 were found good and 1 poor.

On the second inspection 1 grocery was found in good condition.

On the third inspection 1 grocery and 1 drug store were found in good condition.

CANNELTON, PERRY COUNTY—

Of 7 grocery stores inspected, 5 were found good, 1 fair and the grocery store owned by Clark's Department Store was found to be in excellent condition. Two meat markets and 4 drug stores were in good condition. One restaurant was found good. The Sunlight Hotel, owned by Geo. W. Pail, was found to be in excellent condition.

CARLISLE, SULLIVAN COUNTY—

Two dairies were visited and 1 was found good and 1 fair. The creamery owned by James McCounell was visited and found in excellent condition. Four grocery stores were found in good condition and 3 fair. Four meat markets were found good and 1 fair. Two drug stores and 1 slaughter house were visited and found in good condition. Of 3 restaurants visited 2 were found fair and 1 poor. One hotel was visited and found in poor condition, being unclean.

CARMEL, HAMILTON COUNTY—

Eleven inspections were made. Four grocery stores were found good. One meat market was found good and 1 fair. One drug store was found to be in poor condition. Notice was given to give the store a general cleaning up. One bakery was found good and 1 fair. Two restaurants were found to be in fair condition.

CAYUGA, VERMILION COUNTY—

One grocery store was found to be in poor condition. Notice was given to stop spitting on floor and give the store a general cleaning up. One restaurant was closed until made sanitary.

CHAMBERSBURG, ORANGE COUNTY—

Two grocery stores were visited and found in fair condition.

CHESTERTON, WARREN COUNTY—

Ten inspections were made. Two dairies were condemned as being very dirty and unsanitary. One grocery was found good and 1 fair. One meat

market was found fair and 1 poor, being unclean. One drug store and 1 restaurant were found in fair shape. One bakery was found good. One slaughter house was found to be in a very bad condition, being very dirty.

CHRISNEY, SPENCER COUNTY—

Ten inspections were made. Three grocery stores, 1 meat market, 2 drug stores, 2 confectioneries, 1 creamery and 1 hotel were visited and found in poor shape. Toilets were ordered screened and new floors were ordered in the canning factory.

CHURUBUSCO, WHITLEY COUNTY—

Of 6 grocery stores visited, 5 were found good and 1 was found fair. One meat market was found good and 2 fair. Two drug stores were found good. One hotel and 1 restaurant were visited and found in good condition. Two slaughter houses were found in bad shape and were condemned. The buildings were in bad condition. No drainage was provided and the odors were very strong.

CICERO, HAMILTON COUNTY—

One grocery was found good and 4 fair. Two meat markets and 1 bakery were found to be in fair shape. One drug store was found good and 1 bad, being very unclean. One restaurant was found to be in good condition.

CLARKS HILL, TIPPECANOE COUNTY—

One grocery was found good, 6 fair and 3 poor. Two meat markets were found good and 2 fair. One vinegar factory was found to be in fair shape. One drug store was found good, 1 poor and 1 bad, being very unclean. One poultry house was found to be in poor shape. One confectionery was found good and 1 fair. One restaurant was found fair and 1 poor. Notice was given to keep draft tubes of soda fount clean and to clean up back yard.

CLAY CITY, CLAY COUNTY—

Seventy-four inspections were made. Of 25 grocery stores inspected, 17 were found good, 4 fair and 3 poor. Four of the 9 meat markets visited were found in good condition and 5 were found fair. Nineteen drug stores were inspected and 7 were found good, 10 fair and 2 poor. Four bakeries and 4 confectioneries were visited and found in good condition. Three bakeries were found fair. Three hotels and restaurants were found good, 4 fair, and 1 poor, being unclean and unsanitary. One poultry house, 1 bottling works, and 1 ice cream factory were visited and found in fair shape.

CLAYPOOL, KOSCIUSKO COUNTY—

Of 3 groceries visited, 2 were found good and 1 fair. One meat market, 1 drug store, and 3 hotels and restaurants were inspected and found to be in good condition.

CLINTON, VERMILLION COUNTY—

Two slaughter houses were inspected and found in a very unclean and unsanitary condition and were rated poor.

CLOVERDALE, PUTNAM COUNTY—

Of 7 groceries inspected, 1 was found good, 5 fair and 1 poor. One meat market was rated fair, having unclean floors and back yard. One drug store was found good and 1 fair. One poultry house was found good. One bakery was found to be in fair shape. Notice was given to clean up and paint. One restaurant was found fair and 1 poor, being closed until made sanitary. Seventy-five (75) pounds of meat were condemned.

COAL CITY, OWEN COUNTY—

Of 9 grocery stores visited, 3 were found good, 4 fair and 2 poor. Notice was given to clean up at once. Three meat markets were found in fair shape. Two drug stores were found good and 1 fair. Two restaurants were found fair, 1 poor, and 1 bad, being in a very unclean and unsanitary condition. One hotel was condemned until made sanitary. Seven poultry houses were visited. Three were found fair, 3 poor and 1 bad. Notice was given to discontinue use until cleaned up.

COLBURN, DEARBORN COUNTY—

Two grocery stores were visited and found in good condition and 1 was found fair. One drug store was found good and 1 fair.

COLEFAX, CLINTON COUNTY—

Of 4 groceries inspected 1 was found good, 2 fair and 1 poor. Notice was given to clean up and cover dried fruits. One meat market was found to be in poor condition. Notice was given to clean shop at once, repaint and paper. One drug store was found good and 1 fair. One slaughter house was found in bad condition, being very unclean. Two restaurants were found poor, being unclean and poorly lighted and ventilated.

COLUMBIA CITY, WHITLEY COUNTY--

Four dairies were visited and found in fair shape. Of 6 grocery stores visited, 5 were found good and 1 fair. One meat market was found good and 4 fair. Two drug stores were found good and 1 fair. Three restaurants and 1 hotel were found in fair shape. One ice cream factory was found good and 1 fair. One slaughter house was found fair and 1 poor. One poultry house was found in fair shape. One bakery and 1 confectionery was found in good shape and 1 bakery was found in fair shape.

COLUMBUS, BARTHOLOMEW COUNTY—

The grocery and meat market owned by Will Netz was found in excellent condition. Fifteen grocery stores were found good and 6 fair. Five meat markets were found good, 1 fair and 1 poor. Notice was given to clean up at once. One poultry house was found fair. Nine drug stores and 1 fish market were found to be in good condition. One confectionery owned by Zaharako Bros., was found in excellent condition. Six bakeries and confectioneries were found good, 4 fair and 1 poor. Eight hotels and restaurants were found good, 2 fair and 1 poor. One canning factory was found in fair shape.

CONVERSE, MIAMI COUNTY—

Seven inspections were made. Of 4 grocery stores visited, 2 were found good and 2 fair. One meat market and 2 drug stores were visited and found in good condition.

CORYDON, HARRISON COUNTY—

Five grocery stores were found good and 1 fair. The grocery stores and meat markets owned by C. M. Miller and W. H. Keller Company were found to be in excellent condition. Four meat markets were found in good shape. Five drug stores were found good and 1 fair. Of 35 bakeries and confectioneries visited, 29 were found good and 6 were found fair. Twelve hotels and restaurants were found good, 4 fair and 3 poor. Two flour mills, 1 packing company and 2 creameries were visited and found in good condition.

CORYDON JUNCTION, HARRISON COUNTY—

Two inspections were made. One grocery store and 1 drug store were visited and found in good condition.

COVINGTON, FOUNTAIN COUNTY—

One grocery store was found fair and 1 poor. Three confectioneries were found good and 1 poor. Two restaurants and 1 canning factory were visited and found in fair shape.

CRAWFORDSVILLE, MONTGOMERY COUNTY—

Of 25 dairies visited, 9 were found good, 9 fair, 6 poor and 1 bad, being unclean and unsanitary. One milk station was found in a poor condition. The grocery owned by the Pure Food Grocery Company was found in excellent condition. One grocery was found good, 3 fair and 1 poor. The meat market owned by the Hack Brothers and found in excellent condition. One meat market was found good, 2 fair and 1 poor. The drug stores owned by Will Coleman and G. E. Clark were found in excellent condition. Three drug stores were found good and 2 fair. Six bakeries and confectioneries were found fair and 4 good. One restaurant was found good and 3 fair. One second inspection was made of a dairy and it was found to be in poor shape. Notice was given to clean up at once.

CROTHERSVILLE, JACKSON COUNTY—

Three dairies were visited and 2 were found good and 1 poor, being poorly lighted, unclean and having no means of ventilation. Six grocery stores were found good and 1 fair. Three canning factories were found good and 2 fair. One meat market was found good and 1 fair. One drug store was found good and 1 bad, which was closed up until cleaned up. Two bakeries and confectioneries were found good and 1 fair. Of 3 hotels and restaurants visited, 1 hotel was found good, 1 restaurant fair and 1 restaurant poor. Orders were given to clean up and cover prepared food stuffs.

CROWN POINT, LAKE COUNTY—

Of 5 dairies inspected 1 was found good, 2 fair, 1 poor and 1 bad, being condemned until made sanitary.

CULVER, MARSHALL COUNTY—

Of 6 dairies visited, 2 were found good, 3 poor and 1 bad. Of 5 grocery stores visited, 1 was found good, 3 fair and 1 poor. Two meat markets were found good and 1 fair. Two drug stores were found good and 2 poor. Of nine hotels and restaurants inspected, 2 restaurants and 1 hotel were found good, 3 restaurants and 1 hotel were found fair and 2 hotels

were rated poor. Of nine bakeries and confectioneries visited, 2 confectioneries were found good, 1 confectionery and 2 bakeries were found fair and 2 confectioneries and 2 bakeries were found in poor shape. One ice cream factory was found fair and 1 poor. Two slaughter houses were found fair, 1 poor and 1 bad. Notice was given to close place or be prosecuted. One bottling works was found fair and 2 poor.

DARLINGTON, MONTGOMERY COUNTY—

Of 6 grocery stores visited, 4 were found fair and 2 poor. One meat market was found in poor shape. Notice was given to clean back shop, refrigerator and back yard. One drug store was found in fair shape. One restaurant was found good and 1 fair. One confectionery and 2 bakeries were found in good condition and 1 confectionery was found fair. Two bottling works were visited and found in poor shape. Two slaughter houses were found in fair shape. Notice was given to clean up, whitewash and cut weeds.

DEEDSVILLE, MIAMI COUNTY—

Two grocery stores were found good and 2 fair.

DELONG, FULTON COUNTY—

One grocery store was found good and 1 grocery and meat market was found fair.

DELPHI, CARROLL COUNTY—

Two dairies were visited and 1 was found good and 1 was found fair. Of 11 grocery stores visited, 3 were found good, 5 fair, 2 poor and the grocery store owned by Ralph Hill was found in excellent condition. Four meat markets were found fair and 1 poor. Of 6 drug stores visited, 4 were found good, 1 poor and the drug store owned by W. S. Morgorki was found to be in excellent condition. Of 5 bakeries and confectioneries inspected 4 were found good and 1 confectionery was found in poor shape. Notice was given to clean up at once. Four restaurants were found good, 3 fair and 2 poor. Two slaughter houses were found fair and 1 bad. Notice was given to close up until cleaned up. One canning factory was found in good condition. Three ice cream factories were visited, 1 was found good, 1 poor and 1 bad. One bottling works was visited and found in good condition.

DEPUTY, JEFFERSON COUNTY—

Five groceries were visited, 3 were found good and 2 fair. One drug store was found fair. One confectionery and 1 canning factory was found in poor shape.

DENVER, MIAMI COUNTY—

One meat market was inspected and found in good condition.

DUBOIS, DUBOIS COUNTY—

Of 2 grocery stores visited, 1 was found good and 1 fair. One drug store was found good. One canning factory was found fair. Notice was given to screen toilets and to improve drainage and water supply.

DUGGER, SULLIVAN COUNTY—

Of 4 grocery stores visited 2 were found good, 1 fair and 1 poor. Notice was given to clean up back room and back yard at once. One confectionery and 3 restaurants were visited and found in fair shape.

DYER, LAKE COUNTY—

One dairy was found in poor condition. The barn and milk house need new floors and the walls and ceiling need whitewashing. One creamery was found fair. Of 2 groceries inspected 1 was found good and 1 fair.

EAST CHICAGO, LAKE COUNTY—

Seventeen inspections were made. Of 6 milk depots inspected, 3 were found fair and 3 poor. The grocery and meat market owned by W. R. Diamond was visited and found to be in excellent condition. One grocery and meat market was found good and 1 grocery and meat market fair. One drug store was found in good shape. Two confectioneries were found to be in poor condition. The ice cream and fruit room and soda fountain were dirty. Two restaurants were found in fair shape.

EDINBURG, JOHNSON COUNTY—

Three grocery stores were visited and found in good condition. The grocery stores owned by J. J. Hyde and Chupp Bros., were visited and found in excellent condition. Two meat markets and 2 drug stores were visited and found in good condition. One hotel and 1 restaurant were visited and found in good condition. Two restaurants were found poor, being very unclean.

EDWARDSPORT, KNOX COUNTY—

Three groceries were found fair and 1 poor. One meat market was found poor. Notice was given to clean up at once. One drug store was found fair. One restaurant was found in a very bad condition, being very unclean. Notice was given to close up until thoroughly cleaned up.

ELLETTTSVILLE, MONROE COUNTY—

Five inspections were made of 2 grocery stores, 1 meat market, 1 drug store and 1 restaurant, and all were found to be in good condition.

ELKHART, ELKHART COUNTY—

One milk depot was found in good shape. Of 19 groceries visited, 10 were found good and 9 fair. Of 17 meat markets visited, 9 were found good, 7 fair and the meat market owned by C. F. Moyers was found to be in excellent condition. Eight drug stores were found good. Of 9 bakeries and confectioneries visited, 5 were found good and 4 fair. Of 11 hotels and restaurants inspected, 5 were found good and 6 fair.

ELNORA, DAVIESS COUNTY—

Of 25 grocery stores visited, 7 were found good, 16 fair and 2 poor. Bad meat was offered for sale and the stores were dirty. Two meat markets were found fair and 2 poor. Two drug stores were found good and 2 fair. Of 8 bakeries and confectioneries visited 6 were found fair and 2 poor. Of 20 hotels and restaurants, 6 hotels and 11 restaurants were found in fair shape and 3 were found poor. One canning factory and 2 flour mills were visited and found in fair shape.

ELWOOD, MADISON COUNTY—

One grocery was found good and 6 fair. Three meat markets, 1 fish market, and 2 hotels and restaurants were visited and found in fair condition. Four drug stores were found good and 1 fair. One confectionery was found good and 2 bakeries fair.

ENGLISH, CRAWFORD COUNTY—

Of 5 grocery stores visited, 2 were found good, 2 fair and the grocery store owned by Sam Benz was found to be in excellent condition. One meat market was found fair and 1 poor. Two drug stores, 1 bakery, 1 confectionery and 1 canning factory were visited and found in good condition. Of 4 hotels and restaurants visited, 2 hotels were found good, 1 restaurant fair and 1 restaurant was condemned; the building being dilapidated, having bad floors, unclean sidewalks and ceilings. Filthy pools were also found under the floors.

EVANSVILLE, VANDERBURGH COUNTY—

Three hundred and thirty-eight inspections were made. One dairy was visited and found in a very bad condition. Of 133 grocery stores visited, 90 were found good, 37 fair and 2 poor. The grocery stores owned by Bosse Bros. and Harry W. Balz, and the grocery stores and meat markets owned by Wm. E. Meler, and Fred Schroeder were visited and all were found to be in excellent condition. Of 67 meat markets visited 51 were found good, 12 fair and 2 were found poor. Forty-six bakeries and confectioneries were visited. Thirty-three were found good, 7 fair and 1 poor. The confectionery owned by D. Meyers, H. Hermann and The Christian Brothers were found to be in excellent condition. The bakeries and confectioneries owned by Fred Miller and Julius Pastatter were found to be in excellent condition. Twenty-five hotels and restaurants were visited. The hotels owned by the St. George Hotel Company and the New Vendome Hotel Company were visited and found in excellent condition. Nine hotels and restaurants were found good, 12 fair and 2 poor. One fish market owned by Jos. Decker, was in excellent condition. One fish market was found good and 1 fair. One ice cream company was found in poor condition and was closed until made sanitary. One cigar factory owned by H. Fendrich was found to be in excellent condition. One fruit store, 1 five and ten cent store, 2 oyster houses and 1 bottling works were visited and found in fair shape. One coffee, tea and spice manufactory, 1 patent manufactory, 1 butter, eggs and milk company, 1 wholesale fruit house, 1 fruit stand, 1 cigar factory, 1 creamery, 1 pork house, 2 slaughter houses and 44 drug stores were visited and found in good condition.

Five hogs, 48 cans baking powder, 10 cans meat and 11 gallons of oysters were condemned.

EWING, JACKSON COUNTY—

Three groceries were visited, and 2 were found good and 1 fair. One meat market was found good. One drug store was found good and 1 fair. One bakery and confectionery was found to be in fair shape. One slaughter house was found good. Two restaurants were visited and found in fair condition.

FARMERSBURG, SULLIVAN COUNTY—

Four grocery stores were visited and 2 were found good, 1 poor and 1 bad. Notice was given to clean up at once, paint woodwork and cover foodstuffs. One meat market was found in poor shape. Notice was given to clean up side room, whitewash and paint. Two drug stores were found in fair shape. One restaurant was found fair and 1 bad, which was closed until cleaned up.

FLORA, CARROLL COUNTY—

Two groceries were visited and found in good condition, and 2 groceries were visited and found fair. Notice was given to cover meats, bakery goods and clean up back yard. Two restaurants, 1 poultry house and 1 canning factory were inspected and found in fair shape. One ice cream factory was found in poor shape. Notice was given to clean up, cut weeds and whitewash at once. One bakery was found in good condition. Notice was given to paint bake shop. Two drug stores were found good, 2 fair and 1 bad. Notice was given to close up until cleaned up.

FLORENCE, SWITZERLAND COUNTY—

Two grocery stores were found in good shape and 2 were found fair. One drug store was inspected and found in fair shape.

FORT WAYNE, ALLEN COUNTY—

Of 4 dairies visited, 3 were found good and 1 was found fair. Of 62 grocery stores visited, 38 were found good, 22 fair, 1 poor and the grocery store owned by Joe Aurentz was found to be in excellent condition. Of 23 meat markets visited, 18 were found good and 10 fair. Twenty-five drug stores were found good, 2 fair and the following were classed excellent. D. & N. Drug store, Bradley Brothers drug store and the drug store owned by Rhoads Drug Company. Eleven bakeries and confectioneries were found good, 19 fair and 3 poor. The Greek Candy Kitchen was found in excellent condition. Sixteen hotels and restaurants were rated good, 8 fair and 8 poor. Two slaughter houses were inspected and found in a very unsanitary condition. One ice cream factory was rated good and 3 fair. One bottling works was rated fair. An inspection was made of bakery wagons and the following results were obtained: Of 6 inspected, 1 was good, 1 fair, 2 poor and 2 bad, the bread being handled in a very unclean and unsanitary way.

Seven second inspections were made of grocery stores and 5 were found good and 2 fair.

FRANKFORT, OLINTON COUNTY—

One wholesale grocery was found in good condition. One bottling works was visited and found in good shape.

FRANKLIN, JOHNSON COUNTY—

Nine groceries were inspected, 8 were found good and 1 fair. The grocery stores of J. W. Judah and Samuel D. Miller were found excellent. Five meat markets were visited, 4 were good and 1 fair. Three drug stores and 6 bakeries and confectioneries were rated good. One confectionery was rated fair. Three hotels and restaurants were visited and found in good condition. One restaurant was fair and 2 poor, being unclean and unsanitary. One canning factory was rated good.

FREEDOM, OWEN COUNTY—

Twelve grocery stores were inspected, 2 were good, 6 fair, 3 poor and 1 bad, being unclean and unsanitary. One meat market was rated good and 1 fair. Three drug stores were visited, 1 was good, 1 poor and 1 bad. Eight hotels and restaurants were inspected, 1 was good, 5 fair, 1 poor and 1 bad, being very unclean. One bakery and 2 poultry houses were rated fair.

FREDERICKSBURG, WASHINGTON COUNTY—

Four grocery stores and 1 drug store were visited and found in good condition. One restaurant was found fair and 2 poor. Barber shop in restaurant was ordered out.

FRENCH LICK, ORANGE COUNTY—

Of 6 dairies visited, 2 were fair and 4 poor. Six grocery stores, 4 meat markets, 4 drug stores, 1 bakery and 1 confectionery were visited and rated good. One bakery was in a very unsanitary condition and rated bad. The French Lick Springs Hotel was in excellent condition while 9 were good, 2 hotels and 4 restaurants fair, and 1 hotel poor, being very unclean and unsanitary. Two slaughter houses were visited; 1 was poor and 1 bad. The conditions surrounding these slaughter houses were very unsanitary.

On the second inspection 1 bakery was rated fair.

On the third inspection 3 meat markets, 2 grocery stores and 3 drug stores were visited and all found in good condition.

GALENA, FLOYD COUNTY—

One inspection was made of a grocery store, which was found to be in good condition.

GALVESTON, CASS COUNTY—

Ten inspections were made. Two grocery stores, 1 meat market and 1 drug store were visited and found in good condition. One meat market, 1 bakery and 3 restaurants were visited and found in fair condition. One restaurant was rated poor, being unclean and unsanitary.

GARY, LAKE COUNTY—

Seventy-three inspections were made. Of 19 groceries visited 6 were found good, 7 fair, 1 poor and 2 bad, being very unclean. The grocery stores owned by P. Jarabek, Tittle Bros., and L. S. Eisler were visited and found to be in excellent condition. Five meat markets were found good, 5 fair, 1 poor and 2 bad. The meat market owned by L. S. Eisler and the Tittle Bros., were in excellent condition. The drug store owned by Chas. Herbold was rated excellent. Five drug stores found good and 1 fair. Five bakeries and confectioneries were found good and 5 fair. Of 22 hotels and restaurants inspected, 5 were found good, 9 fair, 7 poor and 1 bad. Twenty pounds of meat were condemned.

GARRETT, DEKALB COUNTY—

The grocery stores owned by C. J. Rollins and W. E. Rice were visited and found in excellent condition. Three groceries were found good and 1 fair. Two meat markets were found good and 1 fair. Four drug stores were visited, and 2 were found good and 1 fair. The drug store owned by A. F. Halter was found to be in excellent shape. One bakery and confectionery was found good and 2 bakeries fair. Two hotels and restaurants were in good shape and the restaurant owned by Frank Coverdale was in excellent condition.

GOSHEN, ELKHART COUNTY—

Fourteen inspections were made. Three groceries and 4 drug stores were visited and found in good condition. Two meat markets were found

good and 1 fair. One confectionery was found fair. One hotel owned by the Hascall Hotel Co., was found to be in excellent condition. One restaurant was found good and 1 fair. Twelve pounds of meat were condemned.

GOSPORT, OWEN COUNTY—

Forty-three inspections were made during the year. Eighteen groceries were inspected, 9 of which were good, 7 fair, 1 poor and 1 bad. Three meat markets and 6 drug stores were inspected and found in fair shape. Seven hotels and restaurants were inspected, 3 restaurants and 1 hotel were fair and 3 restaurants were poor, being very unclean. One slaughter house was fair and 2 bad. These slaughter houses were condemned and closed until cleaned up and made sanitary. Six cans of apple butter and 8 cans of pumpkin were condemned.

GRANDVIEW, SPENCER COUNTY—

Seven inspections were made of 3 groceries, 1 meat market, 2 drug stores, 1 bakery and 1 confectionery. All were found to be in good condition.

GRASS CREEK, FULTON COUNTY—

Two grocery stores were found good, 1 fair and 1 poor. One meat market was found fair. One drug store was found poor. The prescription counter was very dirty. One hotel and restaurant was found to be in fair condition.

GREENCASTLE, PUTNAM COUNTY—

Ten grocery stores were inspected, the one owned by Zeis & Co. was in excellent condition. One was good, 4 fair and 4 poor, having unclean tables, shelves and floors. Three meat markets and 1 fish market were visited and rated fair. The drug store of Jones & Stevens was excellent, 7 were good and 1 was fair. Three bakeries and 2 confectioneries were rated fair. Five hotels and restaurants were rated fair, 2 poor and 1 bad which was closed until made sanitary. The Ple-Zee Bottling Works was in excellent condition.

GREENSBURG, DECATUR COUNTY—

Of 10 groceries inspected, 8 were found good and 2 fair. Four meat markets were found good. One slaughter house was found good and 1 poor. Six bakeries and confectioneries were found good and 2 fair. Four hotels and restaurants were found in fair shape.

GREENTOWN, HOWARD COUNTY—

Five groceries were found good and 2 fair. Two meat markets and 2 hotels were in good condition. One drug store was found good and 1 fair. One bakery was found fair.

GREENVILLE, FLOYD COUNTY—

Four grocery stores were inspected. One grocery store was found good, 2 fair and 1 bad. General cleaning up was ordered. One hotel was rated good. One cigar factory was visited and found in good condition. One slaughter house was condemned and closed.

GREENWOOD, JOHNSON COUNTY—

Six groceries were visited, 1 was found good and 1 fair. One meat market was found good and 1 fair. Two restaurants were found good and 1 fair. One drug store, and 1 flour mill were visited and found in good condition. The canning factory owned by J. T. Polk was found in excellent condition. Three confectioneries and 1 bakery were visited and found in good condition.

HAMLET, STARKE COUNTY—

Of 4 groceries inspected, 3 were found good and 1 fair. One meat market was found good and 1 fair. One drug store was rated good. One hotel and 1 restaurant were found good and 1 restaurant was found fair.

HAMMOND, LAKE COUNTY—

Thirteen groceries were inspected. Jas. L. Humpfer & Co.'s grocery and meat market was in excellent condition, 6 were good and 6 fair; 14 meat markets were inspected, 1 was excellent, 7 good and 6 fair; 5 drug stores were good and 1 fair. Fourteen bakeries and confectioneries were visited, 1 was good, 7 fair and 5 poor, being in an unclean condition. The confectionery of H. M. Bicknell was excellent. Four of the 7 hotels and restaurants visited were good and 3 were fair. One canning factory was rated good.

HANNA, LAPORTE COUNTY—

One grocery was visited and found in good shape. Three groceries and 1 meat market were found fair. One drug store was rated poor and 1 hotel fair.

HANOVER, JEFFERSON COUNTY—

On the first inspection 1 slaughter house was visited and found in poor condition. The place was ordered whitewashed.

On the second inspection 2 groceries were found good and 1 fair. One meat market was rated poor, the building being dilapidated.

HARDINSBURG, WASHINGTON COUNTY—

One grocery store and 1 creamery were visited and found in good condition. One confectionery was visited and found in fair condition.

HEBRON, PORTER COUNTY—

One dairy was visited and found in fair shape.

HENRYVILLE, CLARK COUNTY—

Of 8 grocery stores visited, 7 were found good and 1 fair. Two meat markets, 1 drug store, and 1 flour mill were visited and found in good condition. One hotel and 1 confectionery were visited and found in fair shape.

HIGHLAND, LAKE COUNTY—

Two dairies were inspected, 1 being poor and 1 bad. The stables need more light, better ventilation and a general cleaning up.

HILLSDALE, VERMILLION COUNTY—

Of the 13 inspections made, 5 grocery stores were visited and 2 were fair and 3 poor. Two meat markets were rated fair. One drug store was poor, having dirty prescription counters, floors, walls and ceiling. One

confectionery was rated good. Of 4 restaurants visited, 3 were fair and 1 poor. Bread, cakes and prepared food stuffs that were exposed to dirt and flies were ordered to be covered up.

HOBART, LAKE COUNTY—

Of seven dairies inspected, 2 were found fair, 3 poor and 2 bad.

HOPE, BARTHOLOMEW COUNTY—

One canning factory was visited and found in good condition.

HUNTERTOWN, ALLEN COUNTY—

Of 3 groceries inspected 1 was rated good and 2 fair. One meat market was rated fair and 1 poor, being unclean and unsanitary.

HUNTINGBURG, DUBOIS COUNTY—

Forty-seven inspections were made. Two dairies were visited, 1 was fair and 1 poor. Notice was given to build new milk house and barn at once. Of 14 grocery stores visited, 11 were good, 2 fair and that of Mrs. G. C. Pretz was in excellent shape. Three meat markets were rated good. Of 6 drug stores, that of A. H. Miller, Jr., was in excellent condition, 1 was fair and 4 were good. One bakery and 3 confectioneries were rated good and 1 bakery and 1 confectionery fair. Two restaurants and 2 hotels were good, 2 restaurants and 1 hotel fair and 1 restaurant poor, being in a very unclean and unsanitary condition. One creamery, 2 breweries, 2 ice plants and 1 poultry house were visited and all rated good. One poultry house and 1 slaughter house were visited and found fair, being unclean.

HURON, LAWRENCE COUNTY—

Of 5 grocery stores visited, 3 were found good, 1 fair and 1 poor. Notice was given to give the store a general cleaning up. One drug store was found poor, being very unclean. One hotel was found good and 1 restaurant fair.

INDIANA HARBOR, LAKE COUNTY—

Three groceries and meat markets were inspected and 1 was found good, 1 fair and 1 poor. The general conditions were bad, refrigerators unclean and the meat was improperly cared for. Two drug stores were found good. One confectionery was found fair.

INDIANAPOLIS, MARION COUNTY—

Nine hundred and forty-seven first inspections were made this year. Of 364 grocery stores visited, 158 were in good condition, 202 fair and only 4 poor. Of 249 meat markets inspected, 139 were rated good and 110 fair. One hundred and forty-three drug stores were inspected, 104 were good and 39 fair. Of 61 bakeries and confectioneries visited, 21 were good and 40 fair. Of 112 hotels and restaurants visited, 27 were good, 69 fair, and 16 poor. The shelves, tables and floors were unclean, and the bread, cakes, and prepared food stuffs were exposed to dust, dirt and flies. Five wholesale candy factories and 1 fruit house were visited and classed as fair. One pickle factory was classed as bad, 1 poultry house poor and 1 bottling works good. Seventy pounds of meat were condemned, being unfit for human consumption.

Fifty second inspections were made. Of the 10 groceries inspected, 6 were good and 4 fair. Six meat markets were good and 2 fair. Of 12 drug

stores visited, 8 were rated good and 4 fair. One confectionery was classed as good. Of 19 restaurants visited, 6 were found good and 13 fair.

Twenty-five third inspections were made this year. Of 4 grocery stores visited, 2 were good and 2 fair. Four meat markets, 6 drug stores and 1 confectionery were inspected and all classed as good. Seven restaurants were good and 3 being only fairly clean were rated fair.

JAMESTOWN, BOONE COUNTY—

Three groceries and 1 bakery were visited and found in fair shape. One restaurant was found good and 1 bad, being very unclean and unsanitary. Notice was given to clean up at once.

JASONVILLE, GREENE COUNTY—

Six groceries were inspected, 4 were fair and 2 were poor, all were unclean. Four meat markets were found fair and 2 poor. One drug store was fair and that of Lacey & Son was rated excellent. Three restaurants were fair and 1 poor, being unclean and unsanitary.

JASPER, DUBOIS COUNTY—

Of four grocery stores visited 2 were found good and the grocery stores owned by E. J. Kuebler and John T. Melchor were visited and found in excellent condition. One meat market, 2 drug stores and 1 canning factory were visited and found in good condition. Of 4 hotels and restaurants visited, 2 hotels and 1 restaurant were found good and 1 restaurant was found fair. Of 4 confectioneries and bakeries visited, 2 confectioneries and 1 bakery were found good and 1 confectionery was found fair.

JEFFERSONVILLE, CLARK COUNTY—

Of nine dairies visited, 3 were good, 1 fair and 5 poor. Twenty-two grocery stores were inspected. Best Bros.' grocery was found to be in excellent condition, 6 were good, 13 fair and 2 poor. Ten meat markets were visited and 8 were good and 2 fair. Four slaughter houses were inspected and found to be very unclean and unsanitary and were rated poor. Of 6 drug stores visited that of W. S. Schwanneger was excellent and 5 were good. The confectionery and bakery of J. F. Spieth was found in excellent condition. Two were found good and 3 fair. Six hotels and restaurants were inspected, 3 were found fair and 2 poor. An insane helper was employed in one of these restaurants who was dismissed by the inspector. One fish market was fair and 1 canning factory good.

Twelve second inspections were made. Three grocery stores were rated good and 4 fair. Three meat markets, 1 fish market and 1 restaurant were visited and all were found to be in fair shape.

Twelve third inspections were made. Of 7 grocery stores inspected, 5 were good and 2 fair. Three meat markets were rated good. One fish market and 1 restaurant were visited and found in fair shape.

KENDALLVILLE, NOBLE COUNTY—

Of 3 dairies visited 2 were good and 1 very bad which was condemned and closed. Of 13 grocery stores visited, 9 were good, 1 fair, 1 poor and that of W. A. DeVaults and A. D. Martin were in excellent condition. Two meat markets were rated good and 3 fair. Six drug stores were good and that of A. R. Otis was in excellent shape. Five bakeries

and confectioneries were inspected, 1 was found good, 2 fair, 1 poor and the one operated by Fred G. Hess was in excellent condition. Two restaurants were good, 3 hotels and restaurants fair and 1 restaurant poor. Three slaughter houses were inspected and all condemned, being unclean and unsanitary.

KEWANNA, FULTON COUNTY—

Two dairies were visited and found in good condition. One grocery was found to be in good shape. One drug store was found good and 1 fair. One bakery was rated good. One meat market was rated poor. One hotel and restaurant was found in good shape. One restaurant was found fair and 1 restaurant poor. The walls and ceiling and refrigerator were very unclean and the restaurant was poorly lighted and ventilated.

KNOX, STARKE COUNTY—

Eighteen inspections were made, including 1 creamery, 6 groceries, 4 meat markets, 2 drug stores, 2 bakeries and confectioneries and 3 hotels and restaurants. Five groceries were found good and 1 fair. Three meat markets were found good and the meat market owned by C. A. Brown & Co. was found to be in excellent condition. Three drug stores and 1 hotel were found good. One restaurant was found fair and 1 poor, being unclean. Two bakeries and confectioneries were found to be fair. One creamery was rated fair.

KOKOMO, HOWARD COUNTY—

Twenty-one grocery stores were inspected, and 11 were found good, 8 fair and 2 poor. Of the 22 meat markets visited, 11 were found good, 9 fair and 2 poor. Four drug stores were found good, and 3 fair. One restaurant was found good and 3 fair. Two confectioneries and 1 bakery were found in good condition and 3 bakeries were found to be in fair shape.

LADOGA, MONTGOMERY COUNTY—

Ten inspections were made. One grocery was found good and two fair. One meat market was found to be in good shape. Two drug stores were rated fair and 1 poor. Notice was given to clean up and renovate stock at once. One bakery was found poor. The goods were not properly handled and the employes were unclean and untidy. One restaurant was found fair and 1 poor, the refrigerators, walls and ceilings being unclean. Four cans of oysters were condemned.

LAFAYETTE, TIPPECANOE COUNTY—

Of 31 dairies visited, 3 were in good shape, 15 fair, 8 poor and 4 bad, which were closed until made sanitary. The dairy of E. R. Reynolds was in excellent condition. Two bottling works were in fair shape. One was in bad shape, being unclean, goods not properly handled and the employes being unclean and untidy.

LOGANSPOUT, CASS COUNTY—

Of 25 grocery stores inspected, that owned by J. H. Foley & Company was in excellent condition, 15 were good and 9 fair. Eight meat markets were good, 5 fair, 2 poor and 1 bad, the walls, ceiling, shelves and counters being very unclean. Two drug stores were rated good. Of 3 slaughter houses inspected, 1 was fair, 1 poor and 1 condemned. Four bakeries and

confectioneries were rated good and 2 fair. Of 6 hotels and restaurants visited, 2 were found good, 3 fair and 1 poor. Two fish markets were rated fair and 1 poor. Ten pounds of dried fruit were condemned.

On the second inspection 1 grocery store and 1 confectionery were visited and found in good shape.

On the third inspection 1 grocery, 1 meat market and 1 confectionery were inspected and all found to be in good shape.

LAFONTAINE, WABASH COUNTY—

One drug store and 1 restaurant were visited and found in good condition. One meat market was found good and 1 fair. The refrigerator was foul smelling, racks and hooks in the refrigerator were dirty and the back rooms were dirty. Two groceries were found good, 1 fair and the grocery owned by C. T. Royce was in excellent condition.

LAGRANGE, LAGRANGE COUNTY—

Of 2 dairies inspected 1 was rated fair and 1 bad, being very unclean, and was condemned until more sanitary conditions could be obtained. One milk depot was visited and rated fair. Of 22 grocery stores inspected, 14 were good, 7 fair and that of G. B. Moore was in excellent condition. Five meat markets and 6 drug stores were visited and classed good. Seven bakeries and confectioneries were inspected. Two bakeries and 1 confectionery were rated good, 2 bakeries fair and 1 bakery poor. The goods were not properly handled and the shelves were dirty. The confectionery run by A. M. Tillman was found in excellent condition. Of 6 hotels and restaurants visited, 2 were good, 2 fair, 1 poor and 1 fair. One slaughter house was rated good and 1 fair. Twenty pounds of dried fruit were inspected and found to be wormy and were condemned.

LAKE, SPENCER COUNTY—

Six grocery stores were found in fair shape. One meat market, 1 creamery and 1 canning company were inspected and found in fair shape. One drug store was visited and found in poor condition. One slaughter house was found poor. New floor was ordered, the place whitewashed and screens were ordered within ten days. One confectionery was found bad, the place being unsanitary.

LAPORTE, LAPORTE COUNTY—

One bakery, 1 confectionery and 1 restaurant were visited and found in fair shape. Of 5 groceries inspected 4 were found good and the grocery owned by Kerr & Lorig was found to be in excellent condition. Two meat markets were found good and 1 fair. Of 5 drug stores visited, the one owned by F. W. Meissner was in excellent condition. Two were fair and 1 poor. The soda fountain and basement were found to be in an unclean condition.

LAWRENCEBURG, DEARBORN COUNTY—

Thirty-eight inspections were made. Of 10 grocery stores visited, 7 were good and 3 fair. Four meat markets and 6 drug stores were inspected and rated good. Of 14 bakeries and confectioneries visited, 7 confectioneries were good, 3 fair, 2 bakeries good and 2 poor. One hotel

and restaurant was rated good and 1 hotel fair. One ice cream factory was found to be in good condition.

Fourteen inspections were made of stands at the Dearborn county fair, of these 6 were good, 3 fair and 5 poor.

LEBANON, BOONE COUNTY—

One drug store was good and 1 fair. One meat market was rated fair. Two restaurants were classed good, and 1 creamery fair. One confectionery was rated fair and 1 poor. Notice was given to cover confectionery and give the place a general cleaning.

LEESBURG, KOSCIUSKO COUNTY—

Two groceries, 1 meat market, 1 drug store and 1 restaurant were visited and found in a good condition. One restaurant was found to be in fair condition.

LEXINGTON, SCOTT COUNTY—

Three grocery stores were inspected and found in good condition. Two grocery stores and 1 meat market were found to be in poor shape. A general cleaning up was ordered.

Twenty-four cans of baking powder were condemned.

LINTON, GREENE COUNTY—

Of 15 grocery stores visited, that of J. W. Wolford was in excellent condition, 6 were good, 4 fair, 3 poor and 1 bad. Notice was given to clean the store thoroughly, and cover dried fruits which were exposed to the dust and dirt of the streets. Four meat markets were rated good, 2 fair and 1 poor. The meat market of L. W. Warner was rated excellent. Of 6 drug stores inspected the following were found to be in excellent condition: Herman A. Gladys, Joe Haseman, W. J. Johnson and E. T. Sherwood, 1 was good and 1 fair. One bakery was rated fair and 2 poor, the goods being poorly handled and the employees unclean and untidy. W. A. Murry's confectionery was found to be in excellent condition. Five hotels and restaurants were classed as fair and 6 were poor, all being unclean. Two ice cream factories were rated fair. One bottling works was found in a poor condition. Notice was given to clean up at once. The Linton Bottling Works was rated excellent.

LOGOOTE, MARTIN COUNTY—

Of 10 grocery stores visited, 7 were found good and 3 fair. Two meat markets, 2 drug stores, and 1 canning factory were visited and found in good condition. Two bakeries and 1 confectionery were visited and found in good condition. One confectionery was found in fair shape. The bakery and confectionery known as the Little Green bakery and confectionery was visited and found in excellent condition. One poultry house was found good, 1 fair and 1 poor. One slaughter house was found good and 1 poor. One restaurant was visited and found in poor condition.

LUCERNE, CASS COUNTY—

Three grocery stores, 2 meat markets, and 1 bakery were visited and found in fair shape. One restaurant was visited and found in poor condition. The walls, ceilings, shelves and tables were very unclean and the rooms were poorly lighted and ventilated.

LYONS, GREENE COUNTY—

Six grocery stores were rated good. Three meat markets, 7 grocery stores and 2 confectioneries were inspected and found in fair shape. Three drug stores were rated good and 1 fair. One slaughter house was rated good and 1 fair. Of six hotels and restaurants visited, 2 were found good, 3 fair and 1 poor. Notice was given to clean floors, back room, paper or paint and remove bed from the kitchen. Twenty-five cans of Dutch Java and Santos Brand coffee were condemned until relabeled.

MACY, MIAMI COUNTY—

Three groceries were visited and found in fair shape. Three drug stores and 1 restaurant were visited and found in good condition.

MADISON, JEFFERSON COUNTY—

Seventy-nine inspections were made during the year. Of 7 dairies inspected, 2 were found fair and 5 poor. Of 35 inspections made of grocery stores, 29 were good, 5 fair and that of Fred J. Miller, excellent. Two fish markets were found in poor shape. Twenty-four hours were given in which to clean the markets. Nine meat markets were found good. Six drug stores were good, and 1 poor, being very unclean. The confectionery owned by Fred Glass was visited and found in excellent condition. Eight were classed good and 3 fair. One fruit house, 1 chewing gum factory, 1 slaughter house, 1 poultry house, 3 hotels and restaurants were inspected and found in good condition. One poultry house was rated fair, 3 restaurants were rated fair and 1 poor.

On the second inspection 1 poultry house and 1 confectionery were visited and found in good condition.

On the third inspection 23 places were visited. Eleven grocery stores, 3 meat markets, 5 drug stores, 2 bakeries and confectioneries and 1 restaurant were visited and all found to be in good condition. One slaughter house was found in poor shape.

MARCO, GREENE COUNTY—

Of 6 grocery stores visited, 2 were found fair, 1 poor and 3 bad. Notice was given to clean everything at once. One drug store was found in poor shape. One restaurant was visited and found in fair shape. One hotel was visited and rated poor. One restaurant and 1 confectionery were visited and both were condemned and closed until made sanitary.

MARENGO, CRAWFORD COUNTY—

Of 3 grocery stores visited 2 were found good, and 1 fair. One meat market and 2 confectioneries were visited and found in good condition. One drug store was found good and 1 poor. One hotel was rated good and 1 poor. One restaurant was found fair and 1 poor. One slaughter house and 1 canning factory were visited and found in fair shape. An order was given to repair floors and screen toilets of canning factory.

MARION, GRANT COUNTY—

Sixty-eight inspections were made. Of 22 grocery stores inspected, 8 were found good and 14 fair. Five meat markets were found good, 10 fair and 1 poor. Notice was given to give the store a general cleaning up at once. Nine drug stores were found good and 2 fair. One fish market was fair and 1 good. Four bakeries and confectioneries were

found to be good and 2 fair. Eleven hotels and restaurants were found to be in fair condition. Twenty-five pounds of meat, 8 dozen bottles extract and 1 barrel of cider preserved with benzoate of soda were condemned.

MARKLAND, SWITZERLAND COUNTY—

Of 3 grocery stores inspected 2 were found good and 1 poor. One drug store was found fair and 1 flour mill was found in good condition.

MARTINSVILLE, MORGAN COUNTY—

Three groceries were found fair, 1 poor and 1 bad, which was closed until made sanitary. The grocery store owned by Mr. Rose was found to be in excellent condition. One meat market was found good, 1 fair and 1 poor. One drug store owned by Mr. Carleton was in excellent condition. Three were good and 1 fair. One bakery was found fair and 1 bad. Notice was given to clean up at once. Two restaurants were visited and found good and 1 was found poor. Notice was given to clean up and stay clean.

MEDORA, JACKSON COUNTY—

Of 8 groceries inspected, 6 were found good, 1 fair and 1 poor. One meat market was found good and 1 poor. One slaughter house and 1 drug store were found to be in good condition. One confectionery was found fair. The Cottage Hotel owned by Addie Munden and the restaurant owned by O. A. Ernst were visited and found in excellent condition. Forty cans of baking powder were condemned.

MEMPHIS, CLARK COUNTY—

Of the 3 inspections made, 1 grocery store was found good, 1 fair and 1 canning factory was found in fair shape.

MENTONE, KOSCIUSKO COUNTY—

Three groceries, 2 meat markets and 2 drug stores were visited and found in good condition. One bakery and confectionery were visited and found in fair condition, being poorly lighted and ventilated. Of 3 hotels and restaurants visited, 2 were found good and 1 fair.

MEXICO, MIAMI COUNTY—

One grocery, 1 meat market, 1 drug store, and 1 restaurant were visited and all were found to be in good condition.

MIAMI, MIAMI COUNTY—

Of 2 groceries visited, 1 was found good and 1 fair. One meat market was found in good condition.

MICHIGAN CITY, LAPORTE COUNTY—

Forty-nine inspections were made. Of 18 grocery stores visited, 14 were found good, 3 fair and 1 poor. Of 4 meat markets visited, 3 were found good and 1 fair. Of 7 drug stores visited, 6 were found good and 1 fair. Of 12 bakeries and confectioneries visited, 3 bakeries and 3 confectioneries were found good, 4 confectioneries fair and 2 bakeries poor. Of 8 hotels and restaurants inspected, 4 restaurants and 1 hotel were found good and 3 restaurants were found fair.

MILAN, RIPLEY COUNTY—

Of 17 grocery stores visited, 14 were good and 3 fair. Two meat markets were good and 1 fair. Three drug stores were good and 3 fair.

Of 3 bakeries and confectioneries visited, 1 confectionery was found good, 1 fair and 1 bakery was classed as fair. Four hotels and restaurants were rated good and 3 fair. One fish market was good and 1 fair. Three dozen cans of baking powder and 3 bottles of extract were condemned.

MITCHELL, LAWRENCE COUNTY—

Thirty-nine inspections were made. The grocery stores owned by J. F. Mathews, Dilley & Co., and A. R. Ewing & Son were visited and found to be in excellent condition. Twenty groceries were found good. Five meat markets were found good and 1 fair. Eight drug stores were found good. One poultry house, and 3 restaurants were found in fair shape. Four bakeries and confectioneries were found good, 2 fair, 1 poor and 1 bad. Strict orders were given to put in new floors in bake shops and provide better protection from outside contamination.

MISHAWAKA, ST. JOSEPH COUNTY—

Eleven dairies were inspected, 1 was good, 5 fair, 4 poor and 1 bad. One milk depot was rated good and 1 poor. Twenty-three grocery stores were classed as good while 1 was fair. Eleven meat markets were good and 3 fair. Of 10 drug stores visited, 8 were found good, 1 fair and that of Robinson & McFarland was excellent. Eight confectioneries were classed fair, and 1 bakery was found very clean. One restaurant was good, 4 fair and 2 poor. Two bottling works were visited and rated good.

MONTEZUMA, PARKE COUNTY—

One grocery store was found to be in good condition. One drug store was found in fair shape. Of 3 restaurants visited, 1 was found fair, 1 poor and 1 bad, being in an unclean and unsanitary condition.

MONTICELLO, WHITE COUNTY—

Of 16 grocery stores visited, 4 were good, 10 fair and 2 poor. Notice was given to provide glass cases for prepared food stuffs and to clean up. Four meat markets were found in good shape and 1 fair. Three drug stores were good and 1 fair. Of 6 hotels and restaurants visited, 1 hotel and 3 restaurants were good, 8 restaurants fair and 2 restaurants poor, being unclean, poorly lighted and ventilated. One bottling works was found in fair shape. Of 7 bakeries and confectioneries visited, 3 confectioneries were good, 6 fair and 2 bakeries were fair. Notice was given to discontinue selling the artificial cider which was being sold for sweet cider. The bakery and confectionery owned by Fred G. Harlacher was visited and found in excellent condition.

MOORE'S HILL, DEARBORN COUNTY—

One creamery was visited and found in good condition. One grocery store was found good and 1 fair. One meat market was found good and 1 poor, no toilets being provided and the store was poorly lighted and ventilated. One drug store was found good. One confectionery was found to be in fair shape.

MOORESVILLE, MORGAN COUNTY—

Four inspections were made of grocery stores, 3 being in good condition and 1 poor. No toilets were provided and the shelves, counters and back room were unclean.

MORGANTOWN, MORGAN COUNTY—

Fourteen inspections were made. Of five grocery stores visited 4 were found good and 1 fair. Two meat markets, 1 hotel and 1 restaurant were visited and found in fair shape. One drug store was inspected and found in good condition. One bakery and 1 confectionery were visited and found in good condition while 1 confectionery was found in poor condition. One slaughter house was visited and rated poor, having no slaughter house. Notice was issued that the slaughter house had to be built within 30 days.

MUNCIE, DELAWARE COUNTY—

One hundred and sixty-nine inspections were made during the year. Of 19 dairies inspected 2 were found good, 10 fair, 3 poor and 3 bad. The dairy owned by John Rutherford was visited and found in excellent condition. Of 45 grocery stores visited, 21 were good and 24 fair. Of 27 meat markets visited 16 were good and 11 fair, 21 drug stores were good and 2 fair. Of 26 bakeries and confectioneries visited, 18 were found good and 8 fair. Of 23 hotels and restaurants visited 7 were found good, 14 fair and 2 poor. Two meat markets were found good and 3 fair. One ice cream factory was found in fair shape.

MOUNT VERNON, POSEY COUNTY—

Seventeen groceries were inspected. Klein & Mason's grocery was found in excellent condition, 12 were found good, 3 fair and 1 poor. Six meat markets and 6 drug stores were inspected and rated good. Three slaughter houses were rated fair and 1 poor. One commission house was rated poor. Of 10 bakeries and confectioneries inspected, 7 were found good, 2 fair and 1 poor. Of 16 hotels and restaurants visited, 3 were good, 9 fair and 4 poor. One poultry house was rated poor. One bottling works was rated fair.

NAPPANEE, ELKHART COUNTY—

Four grocery stores were found good and 1 fair. Two meat markets were found good. One bakery was visited and found in fair shape. One drug store owned by Coppes Pharmacy Co. was found to be in excellent condition. One drug store was found good and 1 fair. One restaurant was found good, 1 fair and 1 poor, being unclean, poorly lighted and ventilated.

NASHVILLE, BROWN COUNTY—

Fourteen inspections were made. Of 5 grocery stores visited 3 were found good and 2 fair. One meat market, 2 confectioneries and 1 flour mill were visited and found in fair shape. One creamery and 1 flour mill were visited and found in good condition. One hotel was found good and 1 fair. One slaughter house was inspected and found in poor shape. A new slaughter house was ordered within 30 days or the business closed up.

NEW ALBANY, FLOYD COUNTY—

Two hundred and sixteen inspections were made. Of 91 grocery stores inspected, 63 were good, 21 fair and 3 poor. Ten days were given to clean up. The grocery stores owned by H. H. Fein, Aug. Oetkins, The Great Atlantic and Pacific Tea Co., and R. L. Grosheider were in excellent condition. Forty-five meat markets were good, 15 fair and 3 poor. Of 20 drug stores visited, 17 were good, 1 fair and those of Bruno Knoefel

and Chas. B. Dorsey were in excellent shape. The bakeries and confectioneries owned by Nicholas Stein, John Haffen and Geo. F. Goodbub were found to be in excellent condition. One confectionery was good and 1 fair. Eight hotels and restaurants were visited, 3 were good, 3 fair, 1 poor and 1 bad, which was locked up until scrubbed, cleaned, disinfected and made sanitary. One creamery was found good and 1 fair. One milk depot, 1 bottling works and 1 ice plant were visited and rated good. Two fruit stores were good and 1 fair. One brewing company was visited and found in fair shape. Twenty pounds of meat were condemned.

Twenty-two second inspections were made. Of 11 grocery stores visited, 8 were good and 3 fair. Of 9 meat markets visited, 6 were good and 3 fair. One bakery and confectionery was found to be in good shape.

Twenty-two third inspections were made. Nine groceries were good and 2 fair, 7 meat markets were good and 2 fair, 1 bakery and confectionery were rated good.

NEW BERRY, GREENE COUNTY—

Of 13 grocery stores inspected, 4 were good, 6 fair and 3 poor, being very unclean. Three meat markets were visited and 1 was found good, 1 fair and 1 poor. One drug store was rated poor on account of very unclean surroundings. Notice was given to clean up at once and stop spitting on floor. Two drug stores were rated fair. Two restaurants were rated poor and 2 fair. One slaughter house was found in poor shape. One flour and feed mill was found good and 1 fair.

NEWBURG, WARRICK COUNTY—

Of 7 grocery stores visited 4 were found good and 3 fair. One meat market was found good. Of 3 drug stores visited, 2 were found good and 1 fair. One canning factory, 1 flour mill and 1 slaughter house were visited and found in good condition. Of 4 bakeries and confectioneries visited, 2 confectioneries and 1 bakery were found in good condition. One confectionery was found fair.

NEW HAVEN, ALLEN COUNTY—

Five grocery stores were found good and 2 fair, 2 meat markets were good and 2 fair. One drug store was found in fair shape. One bakery and 1 restaurant were visited and found in good condition.

NEWPORT, VERMILION COUNTY—

Of 3 grocery stores visited 1 was found good, 1 fair and 1 bad. One meat market was found good. One restaurant was found fair and 1 poor. Two bottling works were visited and found in fair shape.

NEW ROSS, MONTGOMERY COUNTY—

Nine inspections were made. Of 5 grocery stores visited, 1 was found good, 2 fair, 1 poor and 1 bad, which was closed until made sanitary. One drug store was found fair and 1 poor. One bakery was found in bad shape, with unclean floors and utensils. One restaurant was closed until made sanitary.

NOBLESVILLE, HAMILTON COUNTY—

Of thirteen (13) groceries inspected, 10 were found good and 3 fair. Eight meat markets were found fair. One drug store was rated good and

2 fair. Of 7 bakeries and confectioneries visited 5 were found good, 1 fair and 1 poor. Of 8 hotels and restaurants visited, 2 were found good and 6 fair.

NORTH MADISON, JEFFERSON COUNTY—

One creamery was visited and found in good condition.

NORTH MANCHESTER, WABASH COUNTY—

One dairy was inspected and found in poor condition. Three groceries were found good and 1 fair. Three meat markets were found good. One slaughter house was found in poor condition. One drug store owned by Geo. Burdge was found in excellent condition. One bakery was found fair. One restaurant was found good, 1 fair and 1 poor.

NORTH VERNON, JENNINGS COUNTY—

Of 10 grocery stores visited 8 were found good and the grocery store owned by C. S. Crocker, and the grocery store and meat market owned by J. W. Linkhart, were visited and found in excellent condition. Two meat markets were found in fair condition. Four drug stores were found good and 1 poor. Three restaurants were found good and 1 restaurant was found fair. Two bakeries and 3 confectioneries were visited and found in good condition. Two feed and flour mills and 1 poultry house were visited and found in good condition. One canning factory was visited and found in fair shape.

OAKLAND CITY, GIBSON COUNTY—

One dairy was visited and found in poor condition. Six grocery stores, 4 meat markets, 4 drug stores and 1 creamery were visited and found in good condition. Three slaughter houses were visited. Two were found in fair shape and 1 poor. Ten days were given to lay new floor, make better drainage, effectually screen, whitewash, etc. Two poultry houses were visited and found in fair condition. One was found in poor shape. Better drainage was ordered. One restaurant was found good, 3 fair, and 1 poor. Two hotels were found in fair shape. Two confectioneries and 1 bakery were visited and found in good condition. Two confectioneries and 1 bakery were visited and found in fair shape.

OAKTOWN, KNOX COUNTY—

Four groceries were found good and 1 meat market fair. Two drug stores were found good and 1 fair. One confectionery was found to be in good condition. Two hotels and restaurants were found good. One restaurant was found fair and 1 bad. Notice was given to give the place a general cleaning up and cover confectionery.

ODON, DAVIESS COUNTY—

Of 10 grocery stores visited, 4 were good, 3 fair and 2 poor. Three drug stores were good and 1 fair. One bakery and 2 restaurants were rated good. Two bakeries, 1 cider and vinegar works and 2 restaurants were classed as fair. One hotel was fair and 1 restaurant poor, which was condemned until repaired.

ORLEANS, ORANGE COUNTY—

Seven groceries were visited. Hollowell Bros.' grocery and the grocery stores owned by Harry Millis were in excellent condition, 4 were good

and 1 was fair. Four meat markets and 1 slaughter house were good and 1 meat market and 2 slaughter houses were fair. Four drug stores and 1 ice plant were inspected and found in good shape. Two bakeries and 2 confectioneries were found good. One hotel was good and 1 fair. One restaurant was good and 3 fair. One poultry house was found in a fairly clean condition.

OSGOOD, RIPLEY COUNTY—

One grocery store, 2 meat markets, 3 drug stores and 1 restaurant were visited and found in good condition. Of 6 bakeries and confectioneries visited, 1 bakery and 1 confectionery were found in good condition, 1 bakery and 1 confectionery fair, and 1 bakery and confectionery poor, being unclean and unsanitary. The grocery stores of J. M. McCoy & Co., R. A. Bovard & Sons, and Stuttle & Sons were visited and found in excellent condition. One wholesale grocery was rated good. Fourteen inspections were made at the Ripley County fair of restaurants and confectioneries and of this number 5 restaurants and 7 confectioneries were good and 2 confectioneries were fair.

Two grocery stores were visited on the second inspection and rated good.

On the third inspection 1 restaurant, 3 drug stores, 2 meat markets and 2 grocery stores were visited and found in good condition.

OTTERBEIN, BENTON COUNTY—

Three grocery stores and 1 drug store were visited and found in good condition. One bakery was found good. 1 confectionery fair and 1 bakery bad. Notice was given to clean up and cover prepared foodstuffs. One restaurant was found fair and 1 poor. Notice was given to cover pies, cakes, etc. One stalk of bananas was condemned.

OTISCO, CLARK COUNTY—

Of 4 grocery stores visited, 1 was found good, 2 fair and 1 poor. One creamery was found good. One canning factory was found poor.

OWENSBURG, GREENE COUNTY—

Eight groceries were visited. Two were found good, 2 fair, 3 poor and 1 bad. The store was very unclean and untidy. One drug store was found fair and 1 on account of being very unclean was rated bad. One restaurant was found fair, 1 poor and 1 bad.

OXFORD, BENTON COUNTY—

Of 6 grocery stores visited, 4 were found good and 2 fair. One drug store and 1 bakery were rated good. One restaurant was found good and 1 fair. Notice was given to clean up kitchen and back yard.

PAOLI, ORANGE COUNTY—

One dairy was visited and found in fair shape. Orders were given to separate the horses from cattle, provide for better ventilation by putting in more windows, put a new floor in milk house and screen same. One creamery, 1 meat market, 1 slaughter house, and 3 drug stores were visited and found in good condition. Of 8 grocery stores inspected, 6 were good, 1 fair, and that of B. K. Deremiah was excellent. Two hotels were good and 1 fair. One restaurant was good and 1 fair. Of 8 confectioneries visited, 6 were good and 2 fair. One hundred and twenty dozen bottles of Hop Cream were poured out, being misbranded.

PARIS CROSSING, JENNINGS COUNTY—

One meat market was inspected and found in a fair condition.

PATRIOT, SWITZERLAND COUNTY—

Thirteen inspections were made during the year. The grocery store owned by Wm. Cocket & Son was visited and found in excellent condition. Six grocery stores, 1 meat market, 1 drug store and 1 hotel were inspected and rated good. One drug store, 1 canning factory and 1 confectionery were visited and all found to be in fair shape.

PEKIN, WASHINGTON COUNTY—

Three inspections were made. One grocery store was visited and found in fair shape. Goods were ordered covered up. One confectionery was found in fair shape. One creamery was found to be in fair condition. New floor was ordered.

PERU, MIAMI COUNTY—

One hundred and thirty-five first inspections were made during the year. Of 17 dairies visited, 6 were good, 10 fair and 1 poor. Of 49 drug stores visited, 26 were good, and 23 were fair. Of 32 meat markets inspected, 20 were good, and 12 fair. Eight drug stores were good and 3 fair. One bakery was found good, 1 confectionery good and 1 confectionery fair. Four hotels and restaurants were good, 4 fair and 3 poor, having unclean walls, ceiling and refrigerators. Of 6 slaughter houses visited 2 were good, 1 fair and 2 poor. One creamery, 1 ice company, 1 bottling works, 1 sanitary milk company and 2 canning factories were inspected and found in fair shape. Twenty pounds of bologna and 30 pounds of scraps of beef were condemned.

On the second inspection 40 food-producing establishments were inspected. Of 20 grocery stores visited, 12 were found good, 7 fair and that of McCaffrey & Company was in excellent condition. Two meat markets were good and 5 fair. Three drug stores were good and 4 fair. Two restaurants were found good and 2 fair. One bakery and 1 confectionery and 1 dairy were visited and found to be in good condition.

Forty third inspections were made. Eighteen grocery stores were good, and 6 fair. Six meat markets were good and 3 fair. Three drug stores were good and 1 fair. Of 3 restaurants inspected, 2 were found good and 1 fair.

PERRYSBURG, MIAMI COUNTY—

Two groceries were inspected and 1 was found good and 1 fair.

PERRYSVILLE, MIAMI COUNTY—

One grocery store was found good and 1 fair.

PIERCETON, KOSCIUSKO COUNTY—

Of 6 grocery stores visited, 5 were good and 1 fair. Five meat markets and 1 canning factory were visited and found in good shape. Three drug stores were found good and the one owned by Orr & Switzer was in excellent shape. Four bakeries and confectioneries were good and 1 bakery was fair. One hotel was found fair and 2 good.

PITTSBURG, CARROLL COUNTY—

One dairy was inspected and found in fair shape. One grocery store was inspected and found in good condition. One grocery store was found

in bad condition. Notice was given that if any further use of the room was made in violation of the law prosecution would follow.

PLAINFIELD, HENDRICKS COUNTY—

Five dairies were visited and 2 were found in good condition, 2 fair and 1 poor. Notice was given to screen milk house and clean stable.

PLYMOUTH, MARSHALL COUNTY—

Three dairies were visited and all were found to be in an unsanitary condition. Two were rated poor and 1 bad. Of 7 grocery stores visited, 5 were found good and 2 fair. Three meat markets were rated good. Of 4 drug stores visited, 3 were found good and the drug store of Chas. Reynolds was in excellent shape. One restaurant was good and 1 fair. One bakery and confectionery was visited and rated good and 2 confectioneries were found to be only fairly clean. One canning factory was in poor condition. Notice was given to clean up and provide screens. One slaughter house was rated bad and condemned.

PORTER, PORTER COUNTY—

One meat market was visited and found in good condition.

PRINCETON, KOSCIUSKO COUNTY—

One dairy was visited and found in poor shape. Thirty days were given to remodel. Ten were found good and 2 fair. Four meat markets were good and 3 fair. One fish market and 6 drug stores were found in good condition. One slaughter house was rated fair. Six drug stores were found in good condition. One confectionery was good and the confectionery owned by E. H. Hallett was in excellent condition. One bakery and confectionery was found in fair shape and 1 bakery was found poor. The bakeshop was very unclean. Two canning factories were found good. One ice cream factory was found fair. One hotel was rated good. Two restaurants were found good, 5 fair and 2 poor.

RENSELAER, JASPER COUNTY—

Four grocery stores were visited and found in fair condition. Two meat markets were found good and 1 fair. Three drug stores were found good. Two slaughter houses were visited and found in good condition.

RISING SUN, OHIO COUNTY—

Three grocery stores, 2 meat markets, 2 drug stores, and 1 canning factory were visited and found in good condition. The grocery stores owned by R. D. Fisher and Whitlock & Cooper were visited and found in excellent condition. One confectionery was found good and 1 fair. One bakery, 1 fruit store, and 1 restaurant were visited and rated fair. The hotel owned by John Dowers was found in excellent condition. One restaurant was found in poor shape. New floor and ceiling ordered within thirty days from time of inspection. Bed must be taken out of room.

ROCHESTER, FULTON COUNTY—

Of 10 grocery stores visited, 6 were good, 3 fair and that of J. T. Liston was in excellent shape. Of 7 drug stores visited, 4 were found good and 3 fair. One bakery was rated good and 3 bakeries and confectioneries were found only fairly clean. Two restaurants were found good and five fair. Three meat markets were classed good.

ROCKFIELD, CARROLL COUNTY—

Of 3 grocery stores visited 1 was found good and 2 fair. One drug store was found good and 1 fair. One restaurant was found in bad condition. Notice was given to close up until cleaned up.

ROCKPORT, SPENCER COUNTY—

One creamery, 1 meat market, 2 drug stores and 4 bakeries and confectioneries were visited and found in good condition. Of 10 groceries visited, 8 were found good, 1 fair and 1 poor, being unclean. Five hotels and restaurants were visited, and 2 were found good, 2 fair and 1 poor. One vinegar factory was visited and found in fair shape.

ROCKVILLE, PARKE COUNTY—

One grocery store was found good and 1 fair. One meat market was found fair and 1 poor. Of 3 restaurants visited 2 were found fair and 1 poor. One bakery was found poor, being unclean and unsanitary.

ROSEDALE, PARKE COUNTY—

Of 6 groceries inspected, 2 were found good, 2 fair and 2 poor. One drug store was found in fair shape. Two meat markets and 1 bakery were visited and found in poor condition, being unclean. One restaurant was condemned until made sanitary. Four dozen cans of canned goods, 24 bottles of extract and 500 bottles of patent medicine were condemned.

RUSHVILLE, RUSH COUNTY—

Twenty-one inspections were made. Of 7 grocery stores visited, 3 were found good and 4 fair. One meat market was found good and 1 poor, being unclean. Four drug stores were found to be in good condition. Three bakeries and confectioneries were visited and found to be in good condition. One bakery was found fair. Two restaurants were rated good, 1 hotel fair and 1 restaurant poor.

SALEM, WASHINGTON COUNTY—

Seven grocery stores were found good, 2 fair and the grocery store owned by S. P. Morris was found in excellent condition. Two meat markets were found good and 1 fair. Three drug stores were found to be in good shape. Three hotels were found good and 1 fair. Two restaurants were found good, 1 fair and 1 poor. The kitchen was poorly lighted and ventilated. Two confectioneries were found good. One bakery and confectionery were found to be in good condition. Two slaughter houses were found fair. One creamery was found to be in fair shape. One ice plant was inspected and found in good condition.

SALINE, CLAY COUNTY—

Of 3 grocery stores visited, 2 were found fair and 1 poor, which was closed until cleaned up. Three drug stores were found fair and 1 poor. One restaurant was found only fairly clean and 1 was rated bad. Notice was given to clean up at once. One meat market and 1 confectionery were found in fair shape.

SANDBORN, KNOX COUNTY—

Of 4 grocery stores visited, 2 were good, 1 fair and the grocery store owned by Roeder & Company was in excellent condition. One meat mar

ket was found good and 1 poor, being in an unclean condition. Two drug stores were rated good. One restaurant was good, and 3 hotels and restaurants were rated fair. One poultry house was in poor shape. Seven pounds of meat were condemned.

SCOTTSBURG, SCOTT COUNTY—

Nine grocery stores were visited and 6 were found good, 1 fair, 1 poor and the store owned by the Everett Bros. was excellent. Two meat markets were found good and 1 poor. One hotel was found good, 3 restaurants fair and 1 poor. Notice was given to clean up or discontinue business by April 1st. Two bakeries and confectioneries were found good and 1 poor. Three drug stores were found in good condition.

SELLERSBURG, CLARK COUNTY—

Of 4 grocery stores visited, 3 were found good and 1 fair. One meat market was found good. One drug store and 1 hotel were visited and found in fair shape. Of 4 bakeries and confectioneries visited, 2 confectioneries were found good and 1 confectionery and 1 bakery were rated poor. Notice was given to take bed out of the bakery.

SEYMOUR, JACKSON COUNTY—

Of 9 dairies visited, 2 were good, 2 fair and 5 poor. Of 27 groceries visited, 20 were good, 6 fair and 1 bad which was closed until made sanitary. The following grocery stores were found in excellent condition: Tabb & Tabb, W. E. Hoadley, Hopwell & Brand and Charles E. Abel. Of 12 meat markets inspected, 8 were good, 3 fair and 1 poor. Eleven drug stores, 1 milling company, 1 ice plant, 1 canning factory, 1 cold storage company, 1 egg and poultry company and 1 proprietary drug company were visited and all were found to be in good condition. Of 20 bakeries and confectioneries visited, 14 were found good, 5 fair and the confectionery of Geo. Cole was excellent. Of 18 hotels and restaurants visited, 9 were good, 7 fair, 1 poor and 1 hotel was condemned and closed. One slaughter house was good, 2 fair and 1 poor. One wholesale fruit house was visited and found in fair shape.

SHARPESVILLE, TIPTON COUNTY—

Thirteen inspections were made. Three groceries were found good and 3 fair, 2 meat markets fair, 1 drug store good and 1 fair, 1 bakery fair, 1 restaurant good and 1 restaurant fair.

SHELburn, SULLIVAN COUNTY—

Two grocery stores and 2 restaurants were visited and found in poor condition. Notice was given to clean up everything at once.

SHELBYVILLE, SHELBY COUNTY—

Thirty-two inspections were made. Of 6 grocery stores inspected, 3 were found good and 3 fair. One meat market was found good and 2 fair. Two restaurants were found good and 3 were found fair. Of 7 bakeries and confectioneries visited, 4 confectioneries and 1 bakery were found good, 1 bakery was found fair and 1 bakery poor. One fruit house was found in fair shape. One fish market and 9 drug stores were inspected and all were found in good condition.

SHOALS, MARTIN COUNTY—

Forty-five inspections were made during the year. Of 26 grocery stores visited, 23 were good, 2 fair and that of O. W. Jones was excellent. Two meat markets were good and 1 fair. Of 6 drug stores visited, 3 were good, 2 fair and 1 poor. Two bakeries and confectioneries were found fair and 3 were good. Four restaurants were rated fair. One poultry house was in a poor condition.

SOUTH BEND, ST. JOSEPH COUNTY—

Two hundred and three inspections were made during the year. Of 38 dairies visited, 7 were good, 18 fair, 11 poor and 2 bad. Of 59 grocery stores visited, 30 were good, 21 fair and 6 poor. The drug stores of John Brondbeck and S. B. McQuillen were in excellent shape. Thirty-five meat markets were visited, 15 were good, 15 fair and 5 poor, the premises being in an unsanitary condition. Ten pounds of hearts, 110 pounds of spoiled meat, 5 pounds of brains and 2 buckets of meat intended for use in making sausage, were condemned. One slaughter house was found good, 1 fair, 1 poor and 2 were condemned. Five drug stores were found good and 4 fair. Of 39 bakeries and confectioneries inspected, 9 were good, 20 fair, 8 poor and 2 bad being very unclean and unsanitary. Four hotels and restaurants were found good and 3 fair. One bottling works and 1 tea store were inspected and found in good condition. Two fruit houses were in fair shape. One fish market was rated poor, being unclean and unsanitary.

SOUTH WHITLEY, WHITLEY COUNTY—

Seventeen inspections were made. One grocery was found good and 3 fair, and the grocery owned by D. E. Tillman was in excellent condition. One creamery was found fair. Two meat markets were found good and 1 fair. Two drug stores were found good. One bakery was found good and 2 bakeries and confectioneries fair. Two hotels and restaurants were found good and 1 fair.

SPENCER, OWEN COUNTY—

Two dairies were found to be in fair shape. Of 36 grocery stores visited, 14 were in good condition, 18 fair, 2 poor and 2 were rated bad, due to uncleanliness. One meat market was rated good, 5 fair and 5 poor, having dirty walls, ceiling, floors and windows. Of 10 drug stores visited, 5 were good, 2 fair and the following were in excellent condition: O. E. Dunn, Ellis Drug Co., and Louis Schmidt. Twelve bakeries and confectioneries were rated fair and 3 poor. Of 37 hotels and restaurants visited 7 restaurants were found good, 16 hotels and restaurants were fair, 13 poor, being unclean and the goods not properly handled. One restaurant was condemned and closed until made sanitary. One creamery was found fair and 1 good. One slaughter house, 1 poultry house and 1 flour mill were all found to be in good condition. One poultry house was condemned, being very unclean and unsanitary. The Spencer Mercantile Company was rated excellent.

Thirty second inspections were made. Of 7 grocery stores visited, 5 were good, 1 fair and 1 poor. Two meat markets and 1 poultry house were inspected and classed fair. Four drug stores were good and that of O. Dunn was excellent. One confectionery was good and 2 bakeries poor; the

goods were not properly covered. Of 12 hotels and restaurants visited, 2 were good, 4 fair, and 5 poor. The restaurant of J. O. Dudley was in excellent shape.

Thirty third inspections were made. Of 7 grocery stores visited 4 were good, 1 fair and 2 poor. Two meat markets were in fair shape, Two poultry houses were found in good condition. Of 4 drug stores visited, 2 were found good, 1 fair and the drug store owned by Shultz Drug Company was in excellent condition. Four bakeries and confectioneries visited and 1 was found good, 2 bakeries fair and 1 bakery poor. Of 10 hotels and restaurants inspected, 5 were fair, 2 poor and 1 hotel was in bad shape, being very unclean and unsanitary. The hotel owned by Mrs. Jack Cline was in excellent condition.

STINESVILLE, MONROE COUNTY—

Of 6 grocery stores visited, 2 were found good and 4 fair. Two meat markets were found in fair shape. One drug store was found in poor condition. Two restaurants were rated fair. One slaughter house was rated poor, having no slaughter house, one was ordered within 30 days.

STOCKWELL, TIPPECANOE COUNTY—

One drug store was found in good shape. Three grocery stores and 2 restaurants were found to be in fair shape.

SULLIVAN, SULLIVAN COUNTY—

Fourteen grocery stores were visited, 4 were good, 7 fair, 1 poor and 1 bad, having unclean surroundings. The grocery store owned by H. D. Dutton was in excellent condition. One meat market was good and 2 only fairly clean. Of 4 drug stores inspected, 1 was good, 2 fair and 1 poor. Notice was given to clean up fountain and stop spitting on floor. One confectionery and 2 slaughter houses were found in very unclean condition. Of 10 restaurants visited, 1 was good, 6 fair, 2 poor and 1 bad which was condemned and closed. One fruit stand was found in good condition.

SUNMAN, RIPLEY COUNTY—

Of 5 grocery stores visited, 3 were found good, 2 fair and the grocery store owned by E. R. Behlmer was found to be in excellent condition. Of 3 confectioneries visited 2 were found good and 1 bad which was closed. One meat market, 1 hotel, 1 drug store, 1 creamery, 1 slaughter house and 1 flour mill were inspected and all were found to be in good condition.

SWITZ CITY, GREENE COUNTY—

Twenty-six inspections were made. Of 14 grocery stores visited 1 was found good, 11 fair, 1 poor and 1 bad which was closed until more sanitary surroundings could be obtained. The meat market of L. F. Dolton was found to be in excellent condition. Two meat markets were condemned and closed. Two drug stores were inspected and 1 was given notice to clean up immediately and the other one was closed until made sanitary. Six restaurants were rated fair while 1 hotel was classed as poor being closed.

SYRACUSE, KOSCIUSKO COUNTY—

Three grocery stores were visited and found in good condition. Two meat markets were found good and 1 poor. One drug store was found good and one fair. One hotel and restaurant was found good, and 1 restaurant was found fair. Twenty pounds of meat were condemned.

TELL CITY, PERRY COUNTY—

Twenty-nine inspections were made. The grocery store owned by Aug. Schrieber & Son was visited and found in excellent condition. Seven groceries were found good and 5 fair. One canning factory, 3 meat markets and 1 pretzel factory were visited and found in good condition. Two drug stores were found good and 1 fair. One poultry house was found fair. Of 4 bakeries and confectioneries visited, 3 were found good and 1 fair. Two hotels and restaurants were found good and 1 fair.

TERRE HAUTE, VIGO COUNTY—

Four hundred and eighty-two inspections were made. Of 4 dairies visited 3 were found fair and 1 poor. The general condition as to cleanliness was fair. Of 236 grocery stores inspected, 133 were good, 80 fair and 23 poor, the general conditions being unclean and unsanitary. Four wholesale groceries were found in good condition. Of 133 meat markets visited, 87 were rated good, 38 fair and 9 poor. Five drug stores were rated good and the drug stores belonging to the Oak Hall Pharmacy and the Bauer Drug Company were in excellent condition. One wholesale drug house was found in fair shape. Of 43 bakeries and confectioneries visited, 27 were good, 13 fair and the following excellent: Mokely & Harkness, Peter Georgopolous and Knox & Company. Thirty-two hotels and restaurants were inspected, of which 19 were good, 9 fair and 4 poor. Kable's restaurant and the hotel and restaurant owned by J. C. Kiethe were visited and found in excellent condition. Seven fish markets were rated good and 4 fair. Three ice cream factories were inspected and 1 was found good, 1 fair and 1 poor. One fruit stand was in fair shape. Five commission houses were visited, 1 was found good, 3 fair and 1 poor. Fifty cans of canned goods were condemned.

TIPTON, TIPTON COUNTY—

Nineteen inspections were made. Three groceries were found good and 1 fair. One meat market was found good and 1 fair. Three drug stores were found good and 2 fair. Three bakeries and 5 restaurants were visited and found in fair shape. One hundred and twenty (120) cans of baking powder were condemned.

TROY, PERRY COUNTY—

Fourteen inspections were made. Seven groceries, 2 meat markets, 2 drug stores, and 1 hotel were visited and found in good condition. Two slaughter houses were visited and found in bad condition. Both slaughter houses were condemned.

TUNNELTON, LAWRENCE COUNTY—

Three grocery stores and 1 hotel were visited and found in good condition.

TWELVE MILE, CASS COUNTY—

Three grocery stores were visited and found in good condition. Two restaurants were found in fair shape. One slaughter house was found in bad condition.

UNDERWOOD, CLARK COUNTY—

One canning factory was found to be in good condition.

VALPARAISO, PORTER COUNTY—

Of 7 dairies visited, 2 were found good, 3 fair, 1 poor and 1 bad. Three milk depots were found in fair shape. The grocery store owned by John Bruhn was rated excellent, being very clean. Four groceries were rated good and 1 fair. One slaughter house was found good and 1 fair. One drug store was found good and 1 bottling works fair. The bakery owned by S. C. Bitting was visited and found in excellent condition. Three bakeries and confectioneries were found good and 4 fair. Two restaurants were visited and found good and 1 poor, being unclean.

VEEDERSBURG, FOUNTAIN COUNTY—

One dairy was inspected and found only fairly clean. Of 11 grocery stores inspected, 4 were good, 3 fair, 3 poor and 1 bad and was condemned. Three meat markets were visited and all found in unclean and unsanitary conditions. One slaughter house was visited and rated poor. Notice was given to clean up, whitewash, and screen at once. Of 6 drug stores visited, 2 were found good, 2 fair and 2 poor. Five hotels and restaurants were inspected and 1 hotel was good, 2 fair, 1 poor and 1 restaurant poor. One confectionery was rated fair and the one bakery poor. The goods were not handled properly and the place was unclean.

VERSAILLES, RIPLEY COUNTY—

Five groceries and 1 meat market were visited and found in good condition. One drug store was found good and 1 fair. One restaurant was found to be in fair shape.

VEVAY, SWITZERLAND COUNTY—

One creamery was visited and found in good condition. Of 4 grocery stores visited, 2 were found good, 1 fair and 1 poor. One meat market was found good and 1 poor. Two drug stores and 1 ice company were visited and rated good. One slaughter house was found in fair shape and 1 poor. One poultry house was rated fair. Two confectioneries were visited and found in good condition. One bakery was found in a fair shape. One confectionery was rated poor. New floor and new roof were ordered for kitchen. Better drainage was ordered for back yard. These orders were to be complied with within thirty days. One hotel was found good and 1 hotel was found fair. Two restaurants were visited and found in fair shape. One restaurant was rated poor. Notice given to move out, the building being old and dilapidated.

VIENNA, KNOX COUNTY—

Two grocery stores were found good and one canning factory fair. Notice was given to screen toilets.

VINCENNES, KNOX COUNTY—

One hundred fourteen inspections were made. Of 42 grocery stores visited, 23 were found in good condition, 11 fair and 2 poor. Notice was given to clean up at once. The following grocery stores were found in excellent condition: Hall Bros., Bratton & Braen, John N. Gines & Sons, Lawrence A. Bey (Economy Store), J. A. Louis, John Hoffman & Son.

Of 12 meat markets visited, 10 were found in good condition, 1 fair and the meat market owned by C. B. O'Donnell was found in excellent condition. Fifteen drug stores were visited and 12 were found good, 1 fair

and 1 bad, being closed until made sanitary. The drug store owned by Duesterberg & Kramer was inspected and found in excellent condition. Of 18 bakeries and confectioneries visited, the confectionery owned by Cassell & Son and the Greek Candy Kitchen were found in excellent condition. Ten confectioneries and 1 bakery were visited and found in good condition. Three confectioneries and 1 bakery were classed as fair. One bakery was found in poor shape. Twenty hotels and restaurants were visited. Five restaurants and 3 hotels were found good, 5 restaurants and 4 hotels were found fair and 3 restaurants were classed as poor. One packing company, 1 milk condensing company and 1 flour mill were visited and found in good condition. Two fruit stands were found in fair shape. One bottling works was found good and 1 fair.

WABASH, ST. JOSEPH COUNTY—

Of 12 grocery stores inspected, 8 were found good and 4 fair. One wholesale grocery, 5 drug stores and 3 canning factories were rated good. Of 9 meat markets visited, 4 were good and 5 fair. Four bakeries and confectioneries were rated good and one fair. One hotel and 1 restaurant were found in good shape and 2 restaurants were found fair. One bottling works, 2 fish markets and 1 ice cream factory were inspected and found in fair shape.

On the second inspection 3 groceries, 1 meat market and 1 drug store were visited and found in good condition. Forty pounds of dried fruit were condemned, being dirty and wormy.

WAGONER, MIAMI COUNTY—

One grocery store was visited and found in good condition.

WALKERTON, ST. JOSEPH COUNTY—

One dairy was visited and found to be in a very unclean condition. Two grocery stores were found good and 2 fair. Five meat markets were rated good and 1 fair. Of 9 drug stores visited, 4 were good, 3 fair and 3 poor. One bakery and confectionery was found good and 1 fair. Of nine hotels and restaurants visited 6 were found good, and 3 fair. Two canning factories were visited and found in fair shape.

WALTON, CASS COUNTY—

Two groceries were found in good condition. One grocery store owned by W. S. Kepner was found to be in excellent condition. One meat market was found in fair shape. One drug store and 1 restaurant were visited and found in good condition.

WARSAW, KOSCIUSKO COUNTY—

Of 5 grocery stores visited 4 were found good, and the grocery store owned by F. P. Broadway was visited and found in excellent condition. One meat market was rated fair.

WASHINGTON, DAVIESS COUNTY—

Twenty-six grocery stores were inspected. The grocery stores owned by Neal & Estridge, John Dalley & Co., and the grocery stores and meat markets owned by Cabel Kauffman Mercantile Company, A. F. Vollmer and H. L. Wollener were inspected and found to be in excellent condition. Fourteen groceries were rated good, 4 fair and 3 poor. Seven meat markets were good and 1 fair. One wholesale grocery and 18 drug stores

were visited and found in good condition. Of 18 bakeries and confectioneries visited, 7 were good, 5 fair, 5 poor and the confectionery of C. H. Jones was in excellent shape. Ten restaurants were visited, 3 being good, 6 fair and 1 poor. Notice was given to cover up prepared food stuffs, and remove toilet. One poultry house and 1 canning factory were visited and found in fair shape.

WATERLOO, DEKALB COUNTY—

Nine inspections were made. The grocery store owned by L. E. Zerkle was visited and found in excellent condition. One drug store was found good. Four grocery stores, 1 meat market, 1 bakery and confectionery and 1 hotel were visited and found in fair shape.

WEST BADEN, ORANGE COUNTY—

Thirty-six inspections were made during the year. Of 3 dairies visited, 2 were found fair and 1 poor. Of 5 grocery stores visited 1 was found good, 3 fair and 1 poor. Five days were given to clean up store and cellar and to remove the chickens from the cellar. One meat market was rated poor. Three drug stores were found good and 1 fair. One slaughter house was visited. Thirty days were given to build a new slaughter house. Of 16 hotels and restaurants visited, 6 hotels were rated good and 4 fair. One restaurant was rated fair and 5 poor, unclean conditions existing. Four confectioneries were found good, 1 fair and 1 poor.

WHEATLAND, JASPER COUNTY—

Fourteen inspections were made. Seven groceries, 1 meat market, 2 drug stores and 1 slaughter house were visited and found in good condition. One confectionery was found good and 1 poor. Notice was given to clean up at once. One restaurant was classed as poor, new floor was ordered, also the ceiling in kitchen whitewashed.

WHITELAND, JOHNSON COUNTY—

One canning factory was visited and found in good condition.

WHITING, LAKE COUNTY—

Of 5 milk depots visited, 4 were rated fair and 1 poor. The grocery stores and meat markets owned by H. M. Atkin, Lutz & Quinlin were visited and found in excellent condition. Eight grocery stores and 5 meat markets were good, 12 groceries and 8 meat markets fair, and 2 grocery stores and 2 meat markets were poor. Four drug stores were rated good and 1 fair. Of 9 bakeries and confectioneries visited, 1 confectionery was good, 3 confectioneries and 1 bakery fair, 3 bakeries poor and 1 confectionery bad, having dirty refrigerators, containing old and rotten vegetables. One fish market and 1 wholesale fruit house were inspected and found in poor shape.

WILLIAMSPORT, WARREN COUNTY—

Fourteen inspections were made. Of 4 groceries visited, 1 was found good and 3 fair. Two meat markets were found in fair shape. Two drug stores were found in good condition. One restaurant was found good, 1 fair and 1 poor. Two bakeries were found in poor shape. Notice was given to clean up, whitewash and fix drain at once.

WINAMAC, PULASKI COUNTY—

One dairy was visited and found in a very unsanitary condition. Of 12 grocery stores inspected, 9 were good, 2 fair and the grocery store of John Shill was excellent. Nine meat markets were rated good. One drug store was good, 2 fair and that of The Smith Brothers and Marshall Carper were excellent. Three confectioneries and 2 bakeries were rated good while 1 bakery was found only fairly clean. Four restaurants were classed as good and 2 fair.

WOLCOTTVILLE, LAGRANGE COUNTY—

One dairy was visited and found in poor condition. Of 6 grocery stores visited 1 was good and 5 fair. One meat market was good and 2 fair. Three drug stores were rated good. One bakery and 1 restaurant were classed as good. One canning factory was found in poor shape being unclean and having no screens.

WORTHINGTON, GREENE COUNTY—

Of 30 grocery stores visited, 11 were rated good, 14 fair and 2 poor. The grocery stores owned by Cooper & Hausford, Baker Bros. and George Baker were found to be in excellent condition. One meat market was found good and 5 fair. Three drug stores were found good and 1 fair. Two bakeries were found fair and 1 bakery poor. Notice was given to clean up everything and make place sanitary. Two restaurants were rated good. Six hotels and restaurants fair, and 6 hotels and restaurants poor. The goods were not properly handled and the places were unclean and unsanitary. Two slaughter houses were visited and found in fair shape. Twenty-two cans of baking powder were condemned.

INSPECTION OF CANNERIES—SEASON OF 1909.

The combination of a fertile soil and favorable climate has made of Indiana a state pre-eminently adapted to the growing of fruits and vegetables, and when, in addition to cheap production and bountiful crops, the central location of the state and its proximity to the great markets is considered, it is easy to see why the canning industry has developed to such magnitude. At the present time, Indiana is one of the leading states in the packing of tomatoes and corn. The annual output of peas, beans, pumpkin and fruits is already large and is increasing yearly. It is the belief of the canners that their goods are of superior quality, excelling in color and flavor the pack of other states. When to this superiority the unusual sanitary equipment of the Indiana packer is taken into account, there seems to be no reason why his goods should not command a higher price on the market than those of his competitors.

For the last three years the State Board of Health has made a careful inspection of all the canneries operating in the state, and has, each season, noted a decided improvement over the conditions of the year before. During the canning season just closed, the inspectors visited 123 factories, operating in 109 towns located in every section of the state. One hundred and eight of the factories visited packed tomatoes; 47 factories packed a variety of goods such as corn, peas, beans, pumpkin, sauer kraut, etc. Sixty-one canneries worked up tomato stock into pulp, 10 of which used the pulp in the manufacture of tomato catsup, while the remainder sold it to condiment manufacturers located, in most instances, outside the state. Ten canners made tomato pulp of whole stock, while 51 utilized the trimmings of the table, such as skins, cores, broken tomatoes, etc. This stock was for the most part of satisfactory quality. The tomatoes were sorted and washed as they entered the cannery and no rotten or decomposed or sour tomatoes were allowed to come to the peeling tables. One hundred and nine canneries operate in frame buildings, 12 firms have brick buildings, and 2 occupy cement buildings. Sixty of the buildings inspected were in good condition, 35 were in fair shape, while in 19 cases the building used for the factory was poor. In 87 cases the floors of the factory were of wood, while 30 canneries had cement floors. In 57 canneries the floors were in good shape, in 39 cases they were in fair condition, while 10 canneries had poor floors.

Great improvement is noted in the disposal of waste. During the past season 93 factories turned their waste waters into properly constructed sewers, 18 were so situated that they could not enter a sewer and were compelled to haul their waste away, and in two cases only were the wastes allowed to flow into the creek. One hundred and eleven of the factories operating provided toilets for employes. In 24 instances the toilets were in good condition, in 74 cases they were in fair shape, and the toilets at 13 of the canneries were bad, being poorly located, unscreened and unclean. Washroom facilities are not provided in as many instances as they should be. In 35 canneries good washrooms have been installed. In 80 factories no washrooms are provided, and the employes depend upon hand basins. The employes at 98 canneries are reported by the inspectors as apparently healthy, and in 97 canneries they are as cleanly as is to be expected under the conditions surrounding them at their work. In no instance did the inspectors report sick or diseased employes. In 110 of the canneries running water under pressure is available for all purposes, such as washing the fruits and floors; but 3 factories were not properly provided with water. One hundred and seven canneries clean the floors of the workroom daily, thus keeping them in excellent condition. Four canneries neglected this important feature of sanitary operation. One hundred and ten canneries are reported as being operated by independent companies, 8 canneries were branch stations. One hundred and five canneries are apparently well organized, and 107 are, so far as the inspectors could determine, doing a successful business. Five of the canneries were not well organized and 4 had every appearance of being unsuccessful.

An attempt to describe factory conditions by statistics falls far short of giving an accurate and correct impression. On the whole the results of the inspections show a notable improvement in the method of operation, character of employes and cleanliness of equipment. In almost every instance the manufacturers realize the necessity for clean workrooms, and by daily washing keep the floors clean and sweet-smelling. The character of the tomato pulp manufactured this past season is much better than heretofore, and there is no good reason why it should not be marketed if properly labeled. Unquestionably tomato pulp manufactured from skins, cores and the refuse of the peeling table, cannot be manufactured into tomato catsup without using a label which describes the character of the raw material, but if this is done, as several manufac-

turers are attempting to do, their product is certainly marketable and entirely satisfactory for food. The tomato pack for the season of 1909 falls considerably below the average pack, and, in some instances, the tomatoes were not of as good color as could be desired, but the adoption of a standard by the Indiana canners, establishing the weight of a can of tomatoes and limiting the amount of water, has placed the pack of this season on a more salable basis than ever before. Before another season opens several of the canneries which are reported as operating in poor buildings will have erected new buildings or made such improvements as are necessary to put them in full compliance with the sanitary law. The results of the inspection bear out the belief of the trade that the Indiana canners operate in a more cleanly way, in better buildings and with more intelligent help than the canners of other states, and that the goods they pack are superior in quality and worth a higher price on the market.

ANDERSON.—Anderson Canning Company: The business is conducted in a frame building which is in good condition, with cement floors and good drains. The toilets are in fair condition and washrooms are provided for the employees. The pack is limited to corn and tomatoes. Tomato pulp is also made from the refuse of whole tomatoes and is preserved by the addition of 7 ounces of benzoate of soda to the barrel. The factory is in much better condition than in 1908.

AMBOY.—Amboy Canning Company: The building is of frame and in poor condition; the floors are of plank, in fair condition only. No wash rooms are provided, and all sewage is allowed to run into a nearby creek. The toilet conditions are unsatisfactory, but the employees are cleanly and apparently healthy. The tomato pulp is discarded.

ARCADIA.—Arcadia Canning Company: The building is of frame and in fair condition, with the exception of the floors, which are of wood, so laid that refuse and water runs through to the ground below. Washrooms are provided for employees, but the toilet conditions are only fair. Refuse, skins and cores of tomatoes are worked into pulp, which is preserved with salt. Screens ordered placed in position in 1908, have been provided and general conditions around the factory are improved.

AURORA.—H. D. Tufts: This company packs tomatoes, peaches, pears, etc. in a frame building which is in a poor condition. The floors are of concrete and the sewage is run into an open concrete drain. Separate toilets are provided, but no provision is made for washing, except in hand basins. The tomato pulp is discarded.

AUSTIN.—Austin Canning Company: This company packs hominy, kraut, beans, etc. The business is conducted in a frame building in a good condition. The floors are of board and are in good repair. Good toilets and washrooms are provided and the waste of the factory flows into

the sewer. The waste from the tomato pack is made into ketchup stock, which is preserved with the addition of 5 pounds of salt to a barrel of pulp.

Star Canning Company: This company packs tomatoes, beans and pumpkin. The business is conducted in a frame building in good condition. The floors are of board. The toilets are in fair shape, but no wash-room facilities are provided. The waste is sewered away from the building. The residues from the tomato pack are made into ketchup stock, which is preserved by the addition of 5 pounds of salt to the barrel. Aside from the absence of the washrooms, the factory is clean and well managed.

BLOOMINGDALE.—Van Camp Packing Company: This factory was not in operation at the time visited by the inspectors, but during the season, is used exclusively for canning tomatoes. The building is of frame construction with plank floors and is in good condition. No washrooms are provided but the toilets are outside the building. All sewage enters a sewer. The factory is evidently in good condition and properly operated.

BOONVILLE.—Boonville Canning and Packing Company: This company packs tomatoes, beans and pumpkins. The building is a frame structure with board floors and is in good condition. No washroom facilities are provided but toilets are in fair shape and located outside the building. The sewage is piped away from the factory. The waste tomato stock is made into pulp which is packed in barrels either with the use of benzoate or 5 pounds of salt. The factory is cleaned daily and is evidently properly operated.

BROOKSTOWN.—French Brothers: This company packs corn only. The building is of frame and is in poor condition. The plank floors are fair only. No washrooms are provided and the toilets are unsanitary. The factory was not in operation on the date of inspection, but was apparently in no better shape than it was in 1908.

BROWNSBURG.—Ladoga Canning Company: This company packs tomatoes only and operates a frame building in poor condition. No washrooms are provided and the toilets are very unsanitary. The notice given in 1906 to overhaul the building and premises before beginning work in 1909, was not complied with. The factory is cleaned daily and is well organized and apparently successfully operated.

BUNKER HILL.—Bunker Hill Canning Company: This company packs tomatoes and pumpkin, operating in a frame building in fair condition. The floors are of plank. No washrooms are provided and the toilets located outside the building are very unsanitary. The tomato pulp is hauled away. Waste water from the work rooms runs into a ditch from which water is obtained for washing machinery and utensils. The superintendent agreed to drill a new well at once. The employees are apparently healthy and are cleanly, but the factory is not well organized and is badly operated.

CAMBRIDGE CITY.—L. L. Whitely & Son: This company packs tomatoes in a frame building in poor condition. The floors are of wood and are satisfactory, basins are provided for washing purposes and the toilets

which are located outside the building are fairly sanitary. The sewage flows into a good drain. The employes are healthy and cleanly and the business is well organized and properly operated.

CAMPBELLSBURG.—Campbellsburg Canning Company: This company packs tomatoes only, discarding the pulp. The building is of frame and it is in fair condition with good board floors. No washrooms are provided but sanitary toilets are located outside the building. Waste products are disposed of either by an open ditch or by carting. The employes are healthy and cleanly and the factory is clean and apparently well organized.

CARMACK.—Carmack Canning Company: This company packs tomatoes only, discarding the pulp. The building is of frame and is in fair condition only. The floors, ceilings and side walls are new and were put in in compliance with orders given in 1908. Washrooms are provided and toilets in fair condition are located outside the building. Waste waters and sewage flows under the floor to an open ditch. The employes are healthy and cleanly and the factory is apparently well organized and successfully operated.

CARTHAGE.—Carthage Canning Company: This company packs tomatoes and uses the waste products in the manufacture of pulp which is put down in barrels with 7 pounds of salt. The building is of frame in fair condition. A new wooden floor has been built in compliance with orders given in 1908. No washrooms are provided but the employes are furnished basins for washing purposes. Toilets in fair condition are located outside the building. The sewage and waste water flows into a drain under the building. The employes are healthy and cleanly and the factory is well organized and apparently successfully operated.

CAYUGA.—Cayuga Canning, Packing and Manufacturing Company: This company packs tomatoes only, discarding the pulp. The building is of brick in good condition with good plank floors. No washrooms are provided but sanitary toilets are located outside the building. The sewage flows into a closed sewer. This factory is clean, well organized and apparently successfully operated.

CHARLESTOWN.—Charlestown Canning Company: This company packs tomatoes only, discarding the pulp. The building is of frame construction and is in good condition. The floors are of board. Facilities are provided for washing and a sanitary screened toilet is located outside the building. A portion of the sewage goes into a sewer, the remainder is hauled away. The employes are healthy and cleanly and the factory is clean, well organized and apparently successfully operated.

CHRISNEY.—Chrisney Canning Company: This company packs tomatoes only, discarding the pulp. The work is done in a frame building and in open sheds in poor condition. The floors are of board and are not satisfactory. Washing facilities are provided for the operatives. Separate toilets in fair condition are located outside the building. The sewage is allowed to flow into an open ditch. The buildings are unsuitable for use and should be rebuilt.

CLARKS HILL.—Harmon Bradshaw Company: This company packs tomatoes, pumpkins, etc. The building is of frame with concrete floors and is in good condition. Washrooms are provided and sanitary toilets are located outside the workroom. The tomato pulp and refuse are discarded. The employes are neat and healthy and the factory is clean, well organized and apparently successfully operated.

CLAY CITY.—Ladoga Canning Company: This company packs tomatoes, beans, kraut, catsup, etc. This company occupies a frame building in fair condition with satisfactory floors. No washrooms are provided but fair toilets are located outside the workrooms. Sewage and waste products flow into a closed sewer. The employes are neat and healthy and the floor of the work room is cleaned daily. The factory is well organized and apparently consistently operated. Three inspections were made during the season.

CLINTON.—Clinton Canning Company: This company packs tomatoes and pumpkins. The building is of frame in good condition. The floors are wood and are satisfactory. No washrooms are provided and the toilets are in poor condition. The sewage runs into the well. The tomatoes are not properly sorted when they are received. The floor of the workroom is cleaned daily and aside from the unsatisfactory conditions referred to, is well organized and apparently successfully operated.

COLUMBUS.—Columbus Canning Company: This company packs tomatoes, corn and pumpkins. The building is of brick in fair condition, with fairly good board floors. Facilities are provided for washing, and screened toilets are located outside the building. A portion of the sewage flows into a sewer and the remainder is hauled away. Tomato pulp is packed in barrels without the use of any preservatives except 5 pounds of salt to the barrel. The employes are clean and healthy, and the factory is clean, fairly well organized and is apparently successfully operated.

CORYDON.—Corydon Canning Company: This company packs tomatoes only. The pulp is made from whole sound fruit and is packed in barrels using 8 ounces of benzoate to the barrel. The building is of frame in fair condition with fairly good board floors. The toilets are in good condition. No washrooms are provided, the employes washing at tanks. The sewage flows into a sewer. The employes are neat and clean. The floor of the workroom is cleaned daily, the factory is well organized and apparently successfully operated.

COVINGTON.—Covington Canning Company: The company packs tomatoes only, discarding the pulp. The building is of frame and in good condition with fairly good plank floors. The condition and location of toilets is bad. No washrooms are provided. The sewage flows into a sewer.

CROTHERSVILLE.—Crothersville Canning Company: This company packs tomatoes, hominy, pumpkin and sour kraut. The tomato pulp is packed in barrels using 5 to 6 pounds of salt to the barrel. The pulp is not made from whole, sound fruit. The floors are made of good concrete and boards. The toilets are separate, in fairly good condition and screened.

Washing facilities are provided. The sewage is disposed of through a sewer. Employees are neat and healthy, the factory is well organized and apparently successfully operated. The company is connected with Seymour Factory.

DALEVILLE.—J. G. Sutton: This company packs tomatoes only, discarding the pulp. The building is of frame in fair condition with fairly good wood floors. Fairly good toilets are provided and basins are used for washing purposes. Sewage is disposed of through a drain under the building into a ditch. The factory is well organized and apparently successfully operated.

DELPHI.—Gilot Western Canning Company: This company packs peas and corn. The building is in good condition with good floors made of cement. The toilets are outside the building and are in fairly good condition. No washrooms are provided for and the sewage is disposed of through a sewer.

DEPUTY.—Deputy Canning Company: This company packs tomatoes only, discarding the pulp. The building is of frame in fair condition. The floors are of board and are in fairly good condition. Separate toilets are provided for in fairly good condition and screened. No washrooms are provided but they have facilities for washing purposes. A portion of the sewage goes into a sewer and the remainder is hauled away. The factory is fairly well organized and apparently successfully operated.

DUBOIS.—Dubois Canning Company: This company packs tomatoes only, discarding the pulp. The building is of frame in good condition with good board floors. The toilets are separate and in fairly good condition. No washing facilities are provided and the sewage is disposed of through an open ditch. The toilets are screened. The employees are healthy and neat, the factory is well organized, and apparently successfully operated.

DUNREITH.—Dunreith Canning Company: This company packs tomatoes only. The pulp is packed in barrels using 6 ounces of benzoate to the barrel. The building is of frame in good condition. The floors are in good condition and are of cement. Good toilets are provided and the sewage is disposed of through a good drain. New buckets have been provided, the factory is well organized and apparently successfully operated.

EATON.—Eaton Canning Company: This company packs tomatoes only and the pulp is packed in barrels using 6 ounces of benzoate to the barrel. The building is of frame in fairly good condition, with fairly good wood floors. Fairly good outside toilets have been provided. No washrooms are provided but washbasins instead. The sewage is disposed of through a drain under the building into a ditch. Employees are healthy, the factory is well organized and apparently successfully operated.

EDINBURG.—Naomi Canning Company: This company packs tomatoes, corn, pumpkin and kraut. The tomato pulp is packed in barrels using 8 pounds of salt to the barrel, and is made from refuse, etc. The building is of concrete and in good condition. Good board floors are provided. They have separate toilets which are in fair condition. A portion of the sewage is disposed of through a sewer and the remainder hauled away.

Employees are healthy, clean and neat. The factory is well organized and apparently successfully operated. The company is connected with North Vernon and Loogootee.

ENGLISH.—English Canning Company: This company packs tomatoes and the pulp is packed in barrels using 8 ounces of benzoate to the barrel. The pulp is made from refuse, skins, etc. The building is of frame in fairly good condition, with fairly good board floors. The toilet conditions are fair. Ample facilities are provided for washing purposes. The sewage is disposed of through a sewer. The employees are healthy, clean and neat. The factory is well organized and apparently successfully operated.

ELNORA.—Elnora Canning Company: This company packs tomatoes only, discarding the pulp. The building is of frame and in good condition. Good plank floors are provided, also good outside toilets. They have one washroom only. A portion of the sewage goes into a well and the remainder is hauled away. The factory is well organized and apparently successfully operated.

ELWOOD.—Frazier Packing Company: This company packs tomatoes and the pulp is packed in barrels using 5 to 6 ounces to the barrel. The building is of frame in fairly good condition. The floors are in bad condition and are not properly cleaned. Fairly satisfactory toilets are provided outside, likewise washrooms. Sewage is disposed of through a drain under the building. The employees are healthy and the factory is apparently successfully operated.

EVANSVILLE.—Indiana Canning Company: The company packs tomatoes, packing the pulp in barrels and using 8 ounces of benzoate to the barrel. The pulp is made from refuse, etc. The frame building is in good condition and the floors are in good condition and made of concrete. The toilets are located in the building. Ample facilities are provided for washing purposes. The sewage is disposed of through a closed sewer. Employees are healthy, clean and neat. The floor of the workroom is cleaned two times daily. The factory is well organized and apparently successfully operated.

FLORA.—Flora Canning Company: This company packs tomatoes only. The building is in fairly good condition; the floors are fairly good and made of plank; the toilets are poor and are located outside. No washrooms are provided and the sewage is disposed of through a sewer. The workrooms are not properly screened.

FRANKFORT.—Waukesha Canning Company: This company packs corn and tomatoes, discarding the pulp. The building is of frame and in poor condition. The floors are of wood, the toilets are poor and are located outside. No washrooms are provided. The sewage is disposed of through a sewer. The workrooms are not properly screened. The company is operated as a branch station.

GASTON.—Gaston Canning Company: This company packs tomatoes only. The building is of frame and in fair condition. They have good

cement floors. The toilets are located outside and are in fairly good condition. Basins are provided for washing purposes. The sewage is disposed of by means of a drain connected to a pump.

GREENSFORK.—Greensfork Canning Company: This company packs tomatoes, discarding the pulp. The building is of frame in poor condition. The floors are of wood in fairly good condition. Good toilets are provided but the location of same is only fair. Basins are provided for washing purposes. The sewage is disposed of through a drain under the building which leads to a ditch.

GREENWOOD.—J. T. Polk Canning Company: This company packs tomatoes, corn, peas, pork and beans, catsup, pumpkin, etc. No preservatives are used in the catsup. The pulp is put down in barrels with salt and the bottled goods are preserved by sterilization alone. The building is of brick in excellent condition. The floors are in good condition and are of concrete. The condition of the building is excellent. The toilets are good and are in the building. Washrooms are provided. The sewage is disposed of through a sewer, workrooms are screened and employes are healthy. The factory is well organized and apparently successfully operated.

HENRYVILLE.—Jeffersonville Canning Company: This company packs tomatoes, and packs the pulp in barrels using 8 pounds of salt to the barrel. The pulp is made from refuse, skins, etc. The building is of frame in good condition with fairly good floors. Fairly good toilets are provided which are separate. No facilities are provided for washing purposes. A portion of the sewage is disposed of through a sewer and the remainder is hauled away. Workrooms are not screened. Employes are neat and healthy. The factory is well organized and apparently successfully operated. It is operated as a branch station, Jeffersonville being the main plant.

HOPE.—Hope Canning Company: This company packs tomatoes and corn. The pulp is discarded. The building is of frame, in good condition, with good concrete floors. The fairly good separate toilets are screened. Facilities are provided for washing purposes. Part of the sewage is disposed of through a sewer and the remainder hauled away. The employes are healthy and neat. The factory is well organized and apparently successfully operated. The company is connected with the Columbus factory.

HUNTINGBURG.—Huntingburg Canning Company: This company packs tomatoes only, discarding the pulp. The building is in good condition, with good board floors. The toilets are separate and in good condition. Ample facilities are provided for washing purposes. The sewage is disposed of through a sewer. The employes are healthy and neat. The factory is well organized and apparently successfully operated.

INDIANAPOLIS.—Van Camp Packing Company: This company packs tomatoes, corn, beans and beets. The building is of frame in good condition. Good wood floors are provided also good outside toilets and washrooms. The sewage is disposed of through a good drain. The factory is well organized and apparently successfully operated.

INDIANAPOLIS.—Schnull & Company: This company packs tomatoes and fruits. The building is made of brick and is in good condition. They have good cement floors and fairly good toilets are provided. The sewage is disposed of through a good drain. The factory is well organized and apparently successfully operated.

INDIANAPOLIS.—Columbia Conserve Company: This company packs tomatoes and fruits. The building is of frame and is in good condition. The floors are good and made of cement. The toilets are in good condition. The sewage is disposed of. The pulp is made from whole but sorted tomatoes. The factory is apparently successfully operated.

INDIANAPOLIS.—Hagleskamp Bros. & Haverkamp: This company packs tomatoes and beans. The building is of frame but it is in poor condition. The floors are good and of cement. The toilets are located outside. Basins are provided for washing purposes. The sewage is disposed of through a good drain.

INDIANAPOLIS.—W. D. Huffman & Company: This company puts up catsup, pickles and preserves. The building is in fair condition and made of brick. The floors are cement and wood. Very fair toilets are provided. The sewage is disposed of through a drain. The factory is apparently successfully operated.

JASPER.—Jasper Canning Company: This company packs tomatoes, discarding the pulp. The building is of frame and is new and in good condition. The floors are of board. Ample facilities are provided for washing purposes. The sewage is disposed of through the sewer. The employees are healthy and neat. The factory is apparently successfully operated.

JEFFERSONVILLE.—Jeffersonville Canning Company: This company packs hominy, kraut and beans. The building is of frame in good condition. The floors are of good boards. The toilets are separate and good. Washing facilities are provided. Employees are healthy, and the factory is well organized and apparently successfully operated.

KEMPTON.—Kempton Canning Company: This company packs tomatoes. The pulp is packed, using 5 to 6 ounces of benzoate to the barrel. The building is of frame and in good condition. The wood floors are not tight. Toilets are located outside the building. Basins are provided for washing purposes. The sewage is disposed of through a drain under the building. The factory was not running at the time of the inspection.

KENNARD.—Kennard Canning Company: This company packs tomatoes and uses 5 pounds salt to each barrel of pulp. The building is of frame and is in fair condition. The floors are fairly good and made of wood. The toilets are also fairly good. Washrooms are provided. The sewage is disposed of through a drain under the building. The factory is apparently successfully operated.

KNIGHTSTOWN.—Knightstown Canning Company: This company packs tomatoes, using 5 ounces benzoate to each barrel of pulp. The build-

ing is of frame in fair condition. The floors are good and of wood. Fairly good toilets are provided. Basins are used for washing purposes. Sewage is disposed of through a drain under the building. The factory is well organized and apparently successfully operated.

KOKOMO.—Kokomo Canning Company: This company packs tomatoes and peas. The building is of frame and in fair condition. The floors are of cement and wood part of which are in bad condition. Fairly good toilets are provided. The sewage is disposed of through a drain under the building. Catsup is made from peelings and stems but the label states it is made from tomatoes and skins. The general conditions are bad.

KOKOMO.—Sailor Brothers: This company packs peas and tomatoes. Six ounces of benzoate is used to each barrel of pulp. The building is of frame in good condition and the cement floors are in good condition. Good toilets are provided. The sewage is disposed of through a drain under the building. The general conditions are good. The factory is well organized and apparently successfully operated.

LADOGA.—Ladoga Canning Company: This company packs corn and tomatoes discarding the pulp. The frame building is in good condition with fairly good wood floors and fair outside toilets. No washrooms are provided. The sewage is disposed of through an open sewer which is partly closed. The factory is apparently successfully operated.

LAGRANGE.—Franklin McVeagh & Company: This company packs tomatoes and catsup. One-tenth of one per cent of benzoate is used in the pulp which is made from the whole fruit but not culled. The building is of frame in fair condition, the floors are of wood in fair condition and the outside toilets are bad. There are no washroom facilities. The sewage is disposed of through a drain which leads to the sewer. Orders, were given to keep the mixing and cooking room cleaner, and to wash cuspidors daily and keep them in a convenient place.

LAPEL.—Lapel Canning Company: This company puts up tomatoes using 5 ounces of benzoate to each barrel of pulp. The frame building is in fair condition with good cement floors. Fairly good toilets are provided in the yard. No washrooms are provided. The sewage is disposed of through a drain on the side of the building. Employees are healthy and neat in appearance. The floor of the workroom is cleaned daily. The factory is well organized and apparently successfully operated.

LAKE.—Lake Canning Company: This company packs tomatoes discarding the pulp. The frame building is in fair condition with fairly good board floors. The separate toilets are fairly good. No washrooms are provided. The sewage is disposed of through an open ditch. Workrooms are not properly screened. The floors of the workrooms are cleaned daily. The factory is not in operation this season.

LEBANON.—American Canning Company: This factory is in the hands of a receiver and is not in operation this year.

LEOTA.—Leota Canning Company: This company packs tomatoes discarding the pulp. The frame building is in poor condition, also the board floors. The toilets are separate but in poor condition. No wash-

rooms are provided. The sewage is disposed of through an open ditch. The workrooms are not screened. The employes are cleanly in appearance. The floor of the workroom is cleaned daily. The factory is not well organized and is not successfully operated. Orders were given to put in concrete under floor, to screen privies and to haul refuse away daily.

LEWISVILLE.—Lewisville Canning Company: This company packs tomatoes using 5 pounds of salt to each barrel of pulp. The building is of frame in good condition. The floors are made of wood and are in good condition. The inside toilets are in good condition. No washrooms are provided. The sewage is disposed of through a drain under the building. The factory was not running at the time of the inspection.

LISBON.—Noble County Canning Company: This company packs tomatoes discarding the pulp. The building is of frame and is in good condition. The floors are of plank and are in good condition. The toilets are located outside the building and are in fairly good condition. No washrooms are provided. The sewage is hauled away. Workrooms are not properly screened. The employes are healthy and neat. The floors of the workroom are cleaned daily. It is doubtful as to the factory being well organized and successfully operated.

LITTLE YORK.—Little York Canning Company: This company puts up tomatoes, beans, apples and pumpkin. The frame building is in fair condition with fairly good floors. The toilets are separate and in fair condition. Fairly good facilities are provided for washing purposes. The sewage is disposed of by means of an open concrete sewer. No screens are provided. The employes are healthy and neat. The tomato pulp is packed in barrels using 6 ounces of benzoate to the barrel, and is made from refuse, skins, etc. The floor of the workroom is cleaned daily. The factory is fairly well organized and apparently successfully operated.

LOOGOOTE.—Loogootee Canning Company: This company packs tomatoes discarding the pulp. The frame building is in good condition with good board floors. Fairly good separate toilets are provided and washing facilities. A portion of the sewage is disposed of through a sewer and the remainder hauled away. The employes are healthy and neat in appearance. The factory is well organized and apparently successfully operated. The company is connected with Edinburg Canning Company.

MADISON.—Madison Packing Company: This company packs tomatoes, corn, peas, pumpkin and green beans. The pulp of the tomato is discarded. The building is of frame and brick and is in good condition. Good concrete board floors are provided. The toilets are located in the building. Washrooms are provided. The sewage is disposed of through tile into the Ohio River. No screens are placed in the workrooms. The employes are healthy and neat. The floor of the workroom is cleaned daily. The factory is well organized and is apparently successfully operated.

MARENGO.—Marengo Canning Company: This company packs tomatoes, discarding the pulp. The frame building is in fairly good condition, with fairly good board floors. The toilets are separate and in fairly good

condition. Facilities are provided for washing purposes. The sewage is disposed of through an open ditch. There are no screens in the workrooms. The employes are healthy and neat in appearance. The floor of the workroom is cleaned daily. The factory is well organized and apparently successfully operated.

MARKLAND.—Markland Canning Company: This company packs tomatoes and uses 6 pounds of salt to each barrel of pulp. The building is in fairly good condition with fairly good board floors. No toilets are provided. Basins are used for washing purposes. The sewage is disposed of through an open ditch. The workrooms are not properly screened. The employes are healthy and neat in appearance. The floor of the workroom is cleaned daily. The factory is well organized and fairly well operated. Corrections suggested by the inspector were made at once.

MARTINSVILLE.—Van Camp Packing Company: This company packs tomatoes. The pulp is packed in barrels and is made from the whole sound fruit. The frame building is in good condition and the floors are of cement and in good condition. Fairly good toilets are provided outside the building. Wash rooms are provided. The sewage is disposed of by means of a sewer. The workrooms are not properly screened. The employes are healthy and neat. The factory is well organized and apparently successfully operated.

MEMPHIS.—Memphis Canning Company: This company packs tomatoes and uses 8 ounces of benzoate to the barrel of pulp. The frame building is only in fair condition with fair walls and poor floors, which are of board. The toilets are separate but are in poor condition. No washing facilities are provided. A portion of the sewage is disposed of through an open ditch and the remainder is hauled away infrequently. There are no screens in the workroom. The employes are healthy and neat. The floor of the workroom is cleaned daily and the factory is well organized and apparently successfully operated. This is an unsatisfactory place and no effort has been made to comply with previous orders from the inspector.

MILAN.—J. Weller & Company: This company packs tomatoes, placing the pulp in barrels and using 5 pounds of salt to the barrel. The building is made of wood and iron with good floors of concrete. The toilets are separate and in good condition. Tanks are provided for washing purposes. A portion of the sewage is disposed of through an open sewer and the remainder through a closed sewer. The employes are healthy and neat in appearance. The floor of the workroom is cleaned daily, the factory is well organized and apparently successfully operated. The company is not an independent one.

MUNCIE.—Tuhey Canning Company: This company packs tomatoes and peas, using 6 ounces of benzoate to each barrel of tomato pulp. The building is of frame and in good condition. The floors are good and made of cement. Outside toilets are provided and washrooms are provided. The sewage is disposed of through a drain to sewer. The workrooms are properly screened. The employes are healthy and clean and neat in appearance. The factory is well organized and apparently successfully operated.

MUNCIE.—Thomas Best & Son: This company packs tomatoes. The building is of metal and is in good condition. The floors are of cement and in good condition. Outside toilets are provided and also washrooms. The sewage is disposed of through a drain which leads to the sewer. The workrooms are properly screened. The employes are healthy and neat in appearance. Walls and washrooms have been put in as ordered last year and this plant has an exceptional good drain system. The factory is well organized and apparently successfully operated.

NOBLESVILLE.—Standard Canning Company: This company packs corn, tomatoes and peas. The factory was not in operation at the time of the inspection. The building is made of frame and is in fairly good condition with wood floors. The toilets are located in the yard and are in fairly good condition. Washrooms are provided and the sewage is disposed of through a drain under the floor which leads to a ditch. The factory is well organized and apparently successfully operated.

NEW CASTLE.—Blue River Canning Company: This company packs tomatoes. The factory has not been in operation this year.

NEWBURG.—Newburg Canning Company: This company packs tomatoes and kraut. Four ounces of benzoate and 5 pounds of salt are used to each barrel of pulp. The frame building is in fairly good condition with fairly good board floors. The separate toilets are in fairly good condition. Facilities are provided for washing purposes. The sewage is disposed of through an open ditch. There are no screens in the workroom. The employes are healthy and clean and neat in appearance. Four ounces of benzoate and 5 pounds salt is used in each barrel of tomato pulp. The floors of the workrooms are cleaned daily. The factory is well organized and apparently successfully operated. The refuse is dumped over bank too close to the factory.

NORTH MADISON.—F. I. Smith: This company packs tomatoes, discarding the pulp. The building is of frame with open floors. Washrooms are provided for in the residence. The sewage is hauled away. The workrooms are not properly screened. The employes are healthy and clean in appearance. The floor of the workroom is cleaned daily and the company is independent. The factory is operated on a small scale and the product is handled in a cleanly manner.

NORTH VERNON.—Naomi Canning Company: This company packs tomatoes discarding the pulp. The building is of frame in poor condition. The floors are also in poor condition and made of boards. The toilets are separate and in poor condition. No washrooms are provided. The sewage is disposed of through an open ditch. The workrooms are not properly screened. The employes are healthy and clean and neat in appearance. The floor of the workroom is cleaned daily. The factory is not well organized but is apparently successfully operated. The company is not an independent one, being connected with the Edinburg factory.

OTISCO.—Otisco Canning Company: This company packs tomatoes discarding the pulp. The building is made of frame with fairly good floors, which are made of boards. The toilets are separate, screened and in fairly good condition. Facilities are provided for washing purposes. A por-

tion of the sewage is disposed of through a sewer and the remainder is hauled away. The employes are healthy and neat in appearance. The floor of the workroom is cleaned daily. The factory is well organized and apparently successfully operated.

PATRIOT.—Patriot Canning Company: This company packs tomatoes, using 5 pounds of salt to each barrel of pulp. The building is of brick in good condition. The floors are made of boards. The toilets are separate and in fairly good condition. Basins are provided for washing purposes. A portion of the sewage is disposed of through a ditch and the remainder is hauled away. The workroom is not screened. Employes are healthy and neat. The factory is well organized and apparently successfully operated.

PEKIN.—Pekin Packing Company: This company packs tomatoes, discarding the pulp, in a good frame building. The floors are of board and are in good condition. The toilets are separate and are in fairly good shape. No facilities are provided for washrooms and sewage is hauled away in wagons. Workrooms are not properly screened but the floors and the factory in general are in good condition.

PERU.—Peru Canning Company: This company packs peas, corn, tomatoes and catsup, no benzoate being used for preserving purposes. The building is of frame and in good condition. The floors are of good plank slats. The toilets are situated outside the building and are satisfactory. No washrooms are provided and employes wash in a tank. The sewage is disposed of by means of a sewer. The factory is well organized and apparently successfully operated.

PIERCETON.—Reid-Murdoch Company: This company packs sauer kraut, catsups and pickles using one-tenth per cent of benzoate to each barrel. The building is constructed of wood and brick and is in fair condition. The floors are of good plank. Toilets are in fair condition and situated outside the building. Washrooms are provided but they are not satisfactory. The sewer is the means of drainage. The company will rebuild their plant soon. At present the premises in general are very clean and in first class condition. Employes are neat and healthy in appearance and dress. The factory is well organized and apparently successfully operated.

PLAINVILLE.—Plainville Canning Company: Tomatoes are packed by this company and no preservatives are used. The business is conducted in a frame building which was built new this year. The floors and toilets are in first class condition and sewage is disposed of by means of a sewer and creek. The employes are well dressed and are healthy. Washrooms are provided and the factory in general is in good condition, this being the first year of operation.

PLYMOUTH.—Plymouth Manufacturing, Canning and Packing Company: This company packs corn and tomatoes, in a good frame building. No preservatives are used. The refuse is discarded and dumped about 30 feet from the factory. The floors are of good plank. The toilets are situated outside the building and are only 12 feet from the factory. These should be moved and made flyproof. No washrooms or dressing rooms are

provided and there is no way of disposing of the sewage. The workrooms are not properly screened. The factory is well organized but apparently not successfully operated.

PRINCETON.—Princeton Canning Company: This company does business in a frame building which is in fair condition only. Tomatoes, pumpkins and kraut are packed but no preservatives are used and no pulp is made. The floors are of board and in fair condition. No facilities are provided for washrooms. Separate toilets are provided which are not satisfactory. An open ditch takes care of the sewage. Workrooms are not properly screened but the floors of workrooms are cleaned daily. The factory is well organized, employees are clean and neat, and the company is independent.

RICHMOND.—Richmond Canning Company: This company packs tomatoes and 6 ounces of benzoate is used to each barrel of pulp. The building is a good frame one and the floors are all good and made of wood. Toilets are situated outside the building and are satisfactory at present. Basins are used for washing purposes. Drainage is properly taken care of by means of a sewer. The employees are healthy and well dressed. The floors of the workrooms are cleaned daily, the factory is well organized and apparently successfully operated.

RISING SUN.—Rising Sun Canning Company: This company packs tomatoes and pumpkins using 5 pounds salt to each 50 gallon barrel of pulp. The frame building is in good condition. The floors are made of tight board and the toilets are separate. Washrooms are not provided but they have facilities for washing purposes. The sewage is disposed of through a sewer which leads into the Ohio river. The workrooms are not properly screened. The employees are healthy and neat. The floor of the workroom is cleaned daily. The factory is well organized and apparently successfully operated.

ROCKFORD.—Seymour Canning Company: This building is constructed of frame and is in good condition. The floors are of board and concrete which are in good condition. Tomatoes, hominy, kraut and beans are packed by this company. No benzoate is used but 5 pounds of salt to a barrel. No pulp is made from tomatoes. The toilets are situated outside the building, are separate and satisfactory. No washrooms are provided for employees but other facilities are used. Sewage is disposed of by means of a sewer and wagons. No screens are provided for workrooms. The floors are cleaned daily and the factory in general is in a good clean condition. This company is a branch of the Crothersville Canning Company.

SALEM.—Canton Canning Company: The frame building occupied by this company is in poor condition, the floors are of board, improperly laid and are bad. This company packs tomatoes and pumpkins, but no pulp is packed. The floors of the workrooms are not cleaned and no screens are provided. The toilets are separate and in fair condition. No washrooms are provided. The sewage is disposed of by means of hauling. Workmen are in healthy condition, the factory is only fairly organized, and is only fairly operated. Means are being taken to put the factory in first class condition. At present it will only grade fair.

SCOTTSBURG.—Ox Valley Canning Company: This company packs tomatoes discarding the pulp. The building is of frame but the floors are of board and in poor condition as well as the building in general. No facilities are provided for washing purposes. Toilets are separate and in fair condition only. An open ditch takes care of the sewage. The workrooms are cleaned daily but are not properly screened. Proper water pressure is provided but drainage is poor and floors are not in the best of condition. The factory is only fairly well organized and the company is independent.

Scottsburg Canning Company: This building is of frame and its condition meets the approval of the inspector. The company packs tomatoes, peas, hominy, kraut and pumpkins. Five pounds of salt is used to each barrel of tomato pulp, which is made from the skins and cores of tomatoes. Good toilets are provided which are separate. The sewage is taken care of by means of a sewer. The floors in the building are made of boards and are in good condition. Washrooms are provided, floors of the workroom are cleaned daily and the factory in general would rate good. The factory is well organized and successfully operated, the company being independent.

SELLERSBURG.—Dryer Brothers Canning Company: This company packs tomatoes. The building is of frame and in fair condition. The board floors, however, are partly rotted and in poor condition. The toilets are separate, not screened but are in fairly good shape. No facilities are provided for washing purposes. An open ditch takes care of the sewage until it becomes filled and then it is hauled away. The workrooms are not properly screened but the floors are cleaned daily, proper water pressure is available and the factory in general is in fair condition. If the company runs another year it is their intention to put in good concrete floors.

SHARPSVILLE.—Sharpsville Canning Company: This company cans tomatoes, in a frame and brick building which is in fair condition. The floors are of cement and are first-class. Tomato pulp is packed, and 7 pounds of salt is used in each barrel. The toilets are located in the yard and are in fair condition. Washrooms are provided for the employees. Workrooms are properly cleaned and the floors are cleaned daily and interior, conditions are satisfactory. The sewage is disposed of by means of a cement drain which leads to a ditch. The factory is well-organized and successfully operated.

SHELBYVILLE.—Shelbyville Canning Company: The frame building occupied by this company is in good condition and the wood and cement floors are satisfactory. The drainage is taken care of by means of a tile sewer and drain, but the toilets are located outside the building and are only in fair condition. This company cans corn, peas and tomatoes. No tomatoes were put up this year, however. Wash basins are used by the employees. The workrooms are properly screened, the floors of the workrooms are cleaned daily, proper water pressure is furnished and the factory in general is in good condition.

SHIRLEY.—W. S. Moffit: This factory is a new one and the building and the premises in general are in good condition. The floors are good and made of cement. This company cans tomatoes. Tomato pulp is packed in barrels, and 5 pounds of salt is used per barrel. The pulp

is made from the refuse, skins and cores. Basins are used as a means of washing. Toilets are located in the yard, are in fair condition, and the sewage is disposed of by means of a drain through the building to a ditch. The company is independent, the factory is well organized and is apparently successfully operated.

SPICELAND.—Spiceland Canning Company: This company cans tomatoes. The pulp is packed in barrels, and 6 ounces of benzoate is used to each barrel. The pulp is made from the refuse skins, etc. Galvanized buckets have been discarded and new ones installed as per former directions. The company does business in a frame and brick building which is in fair condition, having good cement floors. Toilets are located in the yard and are satisfactory. Washrooms are provided for the employees, who are healthy and neat in appearance. A good drain is provided throughout the building. Floors of the workroom are cleaned daily, proper water facilities are afforded, and the factory is successfully operated and will grade good.

SUNMAN.—Sunman Canning Company: The frame building occupied by this company is in good condition. The floors are of board and are first-class. The company packs tomatoes and beans. No pulp is packed and no preservatives used. The toilets are in good condition, are properly screened and located in the yard. No washrooms are provided, but other satisfactory facilities are at the disposal of the employees. The employees are cleanly and neat. The sewage is hauled away. The floors of the workroom are cleaned daily, proper water facilities are available, the factory is well organized and successfully operated. This company is independent and is operating a new plant.

SWAYZEE.—Swayzee Canning Company: The building is of frame and brick construction. There is a wood floor which is satisfactory. Toilets are properly located and are in fair condition. No washrooms are provided, but basins are used. This company packs tomatoes, but at the time of the visit of the inspector the factory was not running. The sewage is disposed of by means of a proper drain, which is located under the building. The floor of the workroom is cleaned daily, proper water pressure is furnished, the factory is well organized and operated properly. On the whole the conditions are fair.

SWITZ CITY.—The factory at this place is not operated.

TELL CITY.—Tell City Canning Company: The building is of frame. The general conditions are good and the floors are of board. This company packs tomatoes. No preservatives are used and no pulp is packed. No washrooms are provided, but other facilities are used by the employees. The toilets, however, are separate, but in poor condition. The sewage is disposed of by means of an open sewer. The workrooms are not properly screened, but are cleaned once and twice daily. The factory is well organized, operated successfully, the company is independent and is doing a first-class business under good conditions.

TERRE HAUTE.—The Loudon Packing Company: The buildings occupied by this company are of good frame. The floors are all good, prop-

erly cleaned and interior conditions are good. Toilets, however, are only in fair condition. Proper washing facilities are at the disposal of the employees. This company packs tomatoes, catsups and soups. The pulp is made from the whole sound fruit and no preservatives are used. This factory is one of the best in this territory.

TIPTON.—Fame Canning Company: The frame building which is occupied by this company is in good condition, and the wood floors are comparatively clean. This company packs corn, peas and tomatoes. Tomato pulp is packed in barrels, and 8 pounds of salt is used to the barrel. Pulp is made from the refuse, skins and cores of the tomato. The toilets are situated outside the building and are in fair condition. The sewage is disposed of by means of a drain, and is not of the best class. The employees are apparently in a healthy condition and are neat and cleanly in their dress. The factory as a whole will rate good.

UNDERWOOD.—Hoagland Brothers Canning Company: This company packs tomatoes, using 5 pounds of salt to each barrel of pulp. The building is of frame, in good condition, with good floors of board and concrete. The toilets are separate and in good condition. Washrooms are provided for the employees. The sewage is disposed of through a concrete sewer. There are no screens in the workrooms. The employees are healthy and clean. The pulp is made from the refuse and small tomatoes. The floors of the workrooms are clean, the factory is well organized and apparently successfully operated.

VINCENNES.—Dyer Canning Company: This company puts up tomatoes, beans, pork and beans and hominy. The frame building is in good condition, with fairly good board floors. The toilets are separate, screened and in good condition. Facilities are provided for washing purposes. The sewage is disposed of through a sewer. The workrooms are not properly screened. The employees are clean and neat in appearance. The factory is well organized and apparently successfully operated.

VIENNA.—Vienna Canning Company: This company packs tomatoes, using 5 pounds of salt to each barrel of pulp. The frame building is in fairly good condition, and the floors are of board in fairly good shape. Fairly good separate toilets are provided. Facilities are provided for washing purposes. A portion of the sewage is disposed of through a sewer and the remainder is hauled away. The workrooms are not properly screened. The employees are healthy and neat. The factory is well organized and apparently successfully operated.

WEST TERRE HAUTE.—West Terre Haute Canning Company: This company puts up tomatoes, packing the pulp in barrels and using 4 ounces of benzoate to each barrel. The pulp is made of refuse, skins, etc. The frame building which they occupy is in good shape, with open plank floors, which are not clean. Fairly good toilets are provided, but no washrooms are available. The employees are healthy and neat in appearance. The floor of the workroom is cleaned daily. The factory is well organized and apparently successfully operated.

WABASH.—This company packs corn, tomatoes and peas. They use 6 ounces of benzoate to each barrel of pulp. The building is of stone and cement in good condition, and the floors are also of cement. Fairly good toilets are provided, which are located on the outside of the building. No washrooms are available. The sewage is disposed of by means of a sewer which leads to the river. The workrooms are not properly screened. The employes are clean and neat in appearance. The factory is well organized and apparently successfully operated. The toilets should be connected with the sewer.

WASHINGTON.—This company packs tomatoes, beans and pumpkin. The building is of frame and is in fairly good condition. The floors are of board, and in fair condition, also. Good toilets are provided, which are separate and in good condition. The employes are healthy and neat. The floor of the workroom is cleaned daily. The tomato pulp is discarded. The factory is well organized and apparently successfully operated.

WASHINGTON.—Washington Canning Company: This company packs tomatoes, beans and pumpkins. They discard the tomato pulp. The frame building which they occupy is in fair condition only, and the floors are of board in fair condition. The toilets are good, screened and are separate. Facilities are provided for washing purposes. The sewage is disposed of through an open ditch. The workrooms are not properly screened. The employes are healthy and clean. The workroom floor is cleaned daily, the factory is well organized and apparently successfully operated.

WALKERTON.—Atwood Brothers Company: This company puts up pickles and catsups. The building is of frame in good condition, with fairly good plank floors. Outside toilets are provided, which are in fairly good condition. No washrooms are provided. The workrooms are properly screened, the employes are healthy and neat, the factory is well organized and apparently successfully operated. This company uses no alum or benzoate in their products.

WESTFIELD.—Van Camp Packing Company: This company puts up tomatoes, discarding the pulp. The building is of frame and is in fairly good condition. The floors are fair and made of wood. Outside toilets are provided for the employes. Wash basins are used for washing purposes. The sewage is hauled away. The factory was not in operation at the time of the inspection. The floors of the workroom are cleaned daily. The pulp is thrown in the back yard and is hauled away. The factory is well organized and apparently successfully operated. This company is a branch of the Van Camp Packing Company.

WEST HARRISON.—Geo. Spraul Packing Company: This company packs tomatoes, beans, apples, apple butter, peaches, etc. They use 7 pounds of salt to each barrel of pulp. The building is of frame and in poor shape. The floors are made of board and are in fairly good condition. No washrooms are provided. The sewage is disposed of through an open ditch. No screens are provided for the workrooms. The employes are clean and neat in appearance. Orders were given to improve

building, put in sewer, screen their separate toilets and to keep things clean in general. They were also ordered to put in washrooms. The factory is well organized and apparently successfully operated.

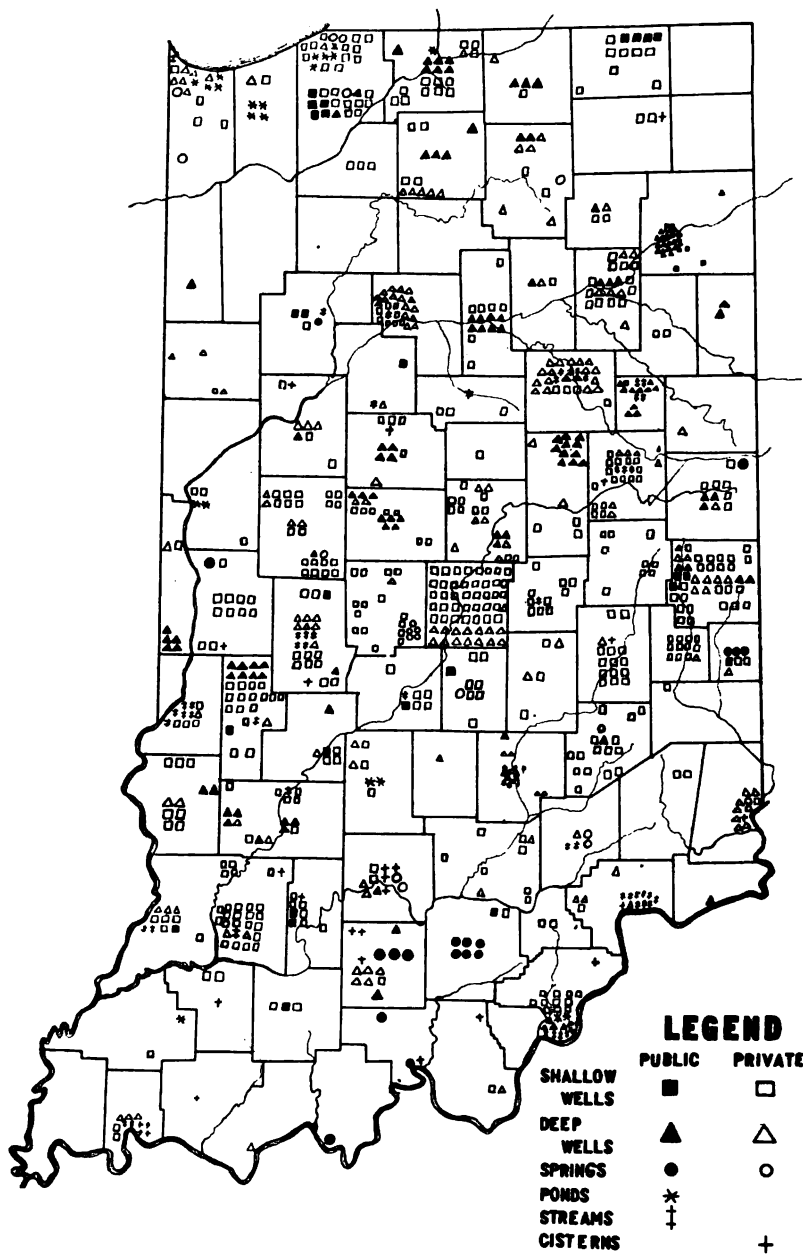
WHITELAND.—Whiteland Canning Company: This company puts up tomatoes and peas. The pulp of the tomato is placed in barrels, using 8 pounds of salt to the barrel. The building is of good frame and in good condition. The floors are of good concrete and boards. Tanks are used for washing purposes. Part of the sewage is disposed of by means of a sewer and the remainder is hauled away. The workrooms are not properly screened. The employes are healthy and neat. The factory is well organized and apparently successfully operated. The company is connected with factories at Franklin, Shelbyville and Tipton.

THE WATER SUPPLY OF INDIANA.

The deforestation of the state has surely imperilled its water supply. Every stream which rises within its boundary or flows into or across it from other states is diminished in size and more subject to flood and drought than before the land was cleared. The underground water supply is diminishing just as rapidly as the surface supply. Wells which a few years ago flowed continuously must now be pumped, and in many cases the ground water supply is altogether inadequate for the needs of the community. When to this constantly lessening quantity of water is added all the sewage of the increasing population, the magnitude of the problem of the future water supply is apparent. During the year a careful survey of the water supplies of thirty cities has been made, the results of which are reported under the several cities. A large number of water samples collected by health officers or sent in by the owners of the supplies, have been analyzed to determine their fitness for domestic use.

The condition of the supplies examined is best illustrated by graphic representation, and the following charts indicate clearly the results of the year's work. A comparative study of the charts showing the character of the public supplies as compared with the condition of the private supplies reveals the great superiority of the quality of the public supply.

The work of the year has been carried on in every portion of the state, and has embraced every variety of public and private water supplies. The location of the supplies examined and the kind of each supply is shown on the accompanying map.



WATER SUPPLIES

INDIANA

1909

922 TOTAL NUMBER EXAMINED

Category	Number
Shallow Wells	478
Deep Wells	269
Springs	51
Streams	38
Ponds	19
Cisterns	21
Miscellaneous	28
Sewage	18
Total	922

478 SHALLOW WELLS

269 DEEP WELLS

51 SPRINGS

38 STREAMS

19 PONDS

21 CISTERNS

28 MISCELLANEOUS

18 SEWAGE

QUALITY OF SUPPLIES

922 TOTAL NUMBER EXAMINED

Category	Number
Good	578
Bad	301
Doubtful	43
Total	922

578 GOOD

301 BAD

43 DOUBTFUL

WATER SUPPLIES IN INDIANA

PUBLIC SUPPLIES

1909

204 TOTAL NUMBER EXAMINED



Category	Number
204 TOTAL NUMBER EXAMINED	204
94 DEEP WELLS	94
38 STREAMS	38
19 PONDS	19
14 SHALLOW WELLS	14
11 SPRINGS	11
28 MISCELLANEOUS	28

94 DEEP WELLS

38 STREAMS

19 PONDS

14 SHALLOW WELLS

11 SPRINGS

28 MISCELLANEOUS

PRIVATE SUPPLIES

719 TOTAL NUMBER EXAMINED



Category	Number
719 TOTAL NUMBER EXAMINED	719
464 SHALLOW WELLS	464
175 DEEP WELLS	175
40 SPRINGS	40
21 CISTERNS	21
19 SEWAGE	19

464 SHALLOW WELLS

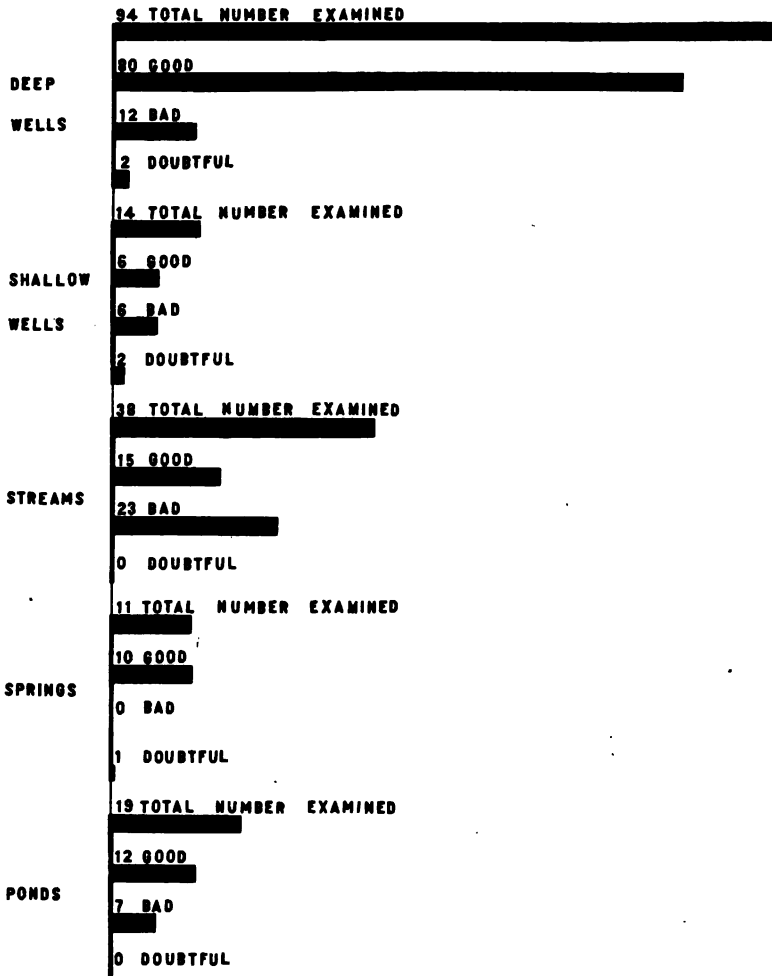
175 DEEP WELLS

40 SPRINGS

21 CISTERNS

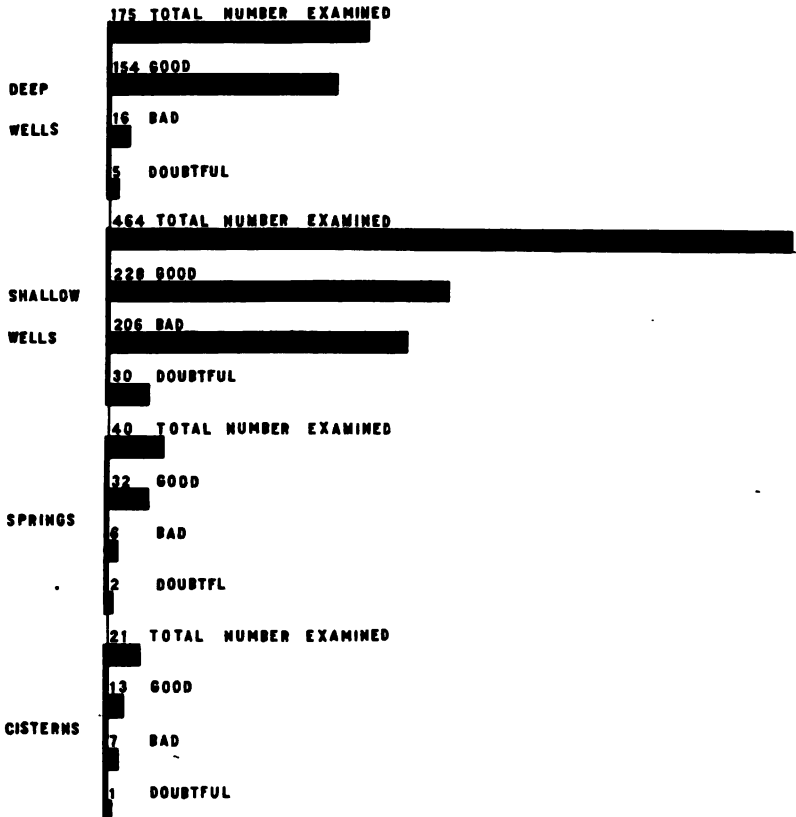
19 SEWAGE

CONDITION OF PUBLIC WATER SUPPLIES IN INDIANA 1909



CONDITION OF PRIVATE WATER SUPPLIES IN INDIANA

1909



During the year ending September 30, 1909, 922 samples of water were analyzed; 269 were deep well waters, the water coming from below an impervious stratum, 478 were from shallow wells and were supposedly surface waters, 19 were from ponds or lakes, 51 from springs, and 38 from streams. In addition to these analyses 28 miscellaneous samples were analyzed. This number included samples of sewage from state institutions, polluted river waters sent in by the fish commission, samples from Lake Michigan and other water supplies which were being investigated and which are elsewhere reported.

Of the deep well supplies, 234 were of good quality, 28 were so polluted as to be classed as bad, and 7 were of doubtful quality, that is, they had certain chemical characteristics indicating pollution, but at the present time their condition is not so serious that they are unfit for use. Of the 478 shallow wells examined, 234 were of good quality, 212 unqualifiedly bad and 32 supplies of doubtful quality. Since a shallow well water of doubtful quality is sooner or later sure to become more seriously polluted and pass into the class of bad waters, doubtful and bad samples may be placed together. We find then that 244, or 50.5 per cent. of the drinking waters from shallow wells must be classed as unsatisfactory. Fifteen stream supplies were good and 23 bad. Nineteen pond or lake supplies were examined. Twelve were of good quality and 7 were bad. Of the 51 spring waters analyzed, 42 were of good quality, 6 were bad and 3 were doubtful. It is evident that many waters sent in as spring supplies, are, in fact, only surface waters, since they possess none of the characteristics of a true spring water. Of the 21 cistern waters analyzed, 13 were of good quality, 7 were bad and 1 doubtful. Cistern water, which is in most instances rain water, when collected from clean roofs in water tight, clean underground tanks, should be entirely satisfactory for drinking and domestic purposes. The results of the work of the laboratory show, however, that 30 per cent. of the cistern waters examined were not potable. The unsatisfactory cistern supply is usually due to its location in the backyard near the privy vault, and leaking walls which admit polluted water from the outside whenever the water level in the cistern is lower than the ground water level of the soil.

Another classification may be made of the work according to the ownership of the sources of supply. Two hundred and four analyses were made of water from public supplies classified as follows: 94 deep wells, 14 shallow wells, 38 streams, 19 ponds or

lakes and 11 springs. Of the deep well supplies 80 were of good quality, 12 were bad and 2 were doubtful. The deep well waters used as public supplies are for the most part of excellent quality from a sanitary standpoint. Of the 38 streams and river supplies, 15 were of good quality and 23 were bad. Several of these samples came from the Ohio river, a supply which in an unfiltered condition can never be depended upon to furnish potable water. Of the private supplies 175 were deep wells, 464 shallow wells, 40 springs and 21 cisterns. One hundred and fifty-four of the deep well waters were of good quality, 16 were bad and 5 doubtful. But 228 of the 464 shallow well waters were potable, 206 were unquestionably bad and 30 were of doubtful quality.

SPECIAL SURVEYS OF PUBLIC WATER SUPPLIES.

ALEXANDRIA.—In 1894 the city built a system of 7 drilled wells averaging about 400 feet deep, located in the Hudson river limestone, between the Niagara limestone and the Trenton rock. The water is pumped into a standpipe of 250,000 gallons capacity, which furnishes domestic pressure at 55 pounds. Direct pressure is available for fire protection at 100 pounds. About two-thirds of the 7,000 population use the city water. The daily consumption is 500,000 gallons. Recent analyses show the water to be of good quality. One private supply has been examined and was good.

ANDERSON.—The city of Anderson owns its supply, which was built in 1886 and remodeled in 1893. The supply is taken from White river and pumped into settling basins by means of two centrifugal pumps of 4,000,000 gallons capacity daily. The settling basins consist of two tanks 50 feet in diameter and 16 feet deep, having a total capacity of 500,000 gallons. From these basins the water is filtered through four concrete rectangular mechanical filters of 1,000,000 gallons capacity each, and four of the New York Continental Jewel type. There are two extra filters installed that are not equipped for filtering purposes. The filtered water passes by gravity into a concrete covered reservoir of 1,100,000 gallons capacity. The company has 24 miles of mains, which supply about 85 per cent. of the total population with city water. The water is pumped by direct pressure at 70 pounds for domestic purposes and 120 pounds for fire protection. The pumping equipment consists of two Duplex Compound Hughes steam pumps of 3,000,000 gallons each, and one Woodbury Compound crank and fly wheel pump of 5,000,000 gallons capacity. The water is sold principally upon flat rate at \$14 per year. The operation of the plant is under laboratory control. Five private wells have been examined, three of which were of good quality and two were bad.

AURORA.—The Aurora Water Works was built in 1904 and is owned and operated by a private company. The supply is taken from the Ohio river and filtered through a New York Continental Jewel filter be-

fore being pumped to the mains. The water is taken from the river with two Van Wie Centrifugal pumps, of 1,000,000 gallons capacity each. The pressure pumps consist of two Smith Vale pumps of 1,000,000 gallons capacity each. The filtration plant consists of two tank settling basins of 50,000 gallons capacity. From the settling basin the water passes through two tub mechanical filters of 500,000 gallons capacity each. The filters are fully equipped with a complete washing system and a mechanical agitating device, also with float valves and a reduced outlet which acts as a rate controller. As the filters are sufficiently checked by the reduced outlet, the omission of these controllers does not effect the operation of the plant. They are not equipped with loss of head gauges, but it may easily be determined when the filters are in need of washing by the amount of water that is coming through the outlet. The water passes through the filters into a wooden tank reservoir of 50,000 gallons capacity. From there it is pumped into a storage tank of 80,000 gallons capacity, which is located on the highest hill near the city and furnishes both domestic and fire pressure at 130 pounds. The population of Aurora is about 6,000, one-third of which is supplied with city water. The daily pumpage is about 200,000 gallons. The water is sold principally upon flat rate at \$11.50 per year for an average five room house with toilet and bath.

BEDFORD.—In 1892 the city built a water plant, taking water from White river and pumping it into the mains against the standpipe head of 60 pounds, which furnishes the pressure for domestic use. The pressure for fire protection is direct at 185 pounds. The standpipe, which is built of iron, is 48 feet high, with a capacity of 35,000 gallons. This is set on a brick base 86 feet high, giving a total head of 116 feet. The pumping equipment, with a capacity of 2,000,000 gallons, consists of two Holyoke Duplex Condensing pumps of 1,000,000 gallons each. The average daily consumption is 1,000,000 gallons. The company has 17 miles of main, which supplies one-third of the 12,000 population with city water. The water is sold principally on flat rate at \$10.50 per annum for domestic use. This supply is not suitable for drinking and domestic purposes and is rarely used for such. Thirty-three private supplies were examined, 17 of which were of satisfactory quality, 2 were of doubtful quality and 14 were bad.

BLOOMFIELD.—The Home Light and Water Company, a private concern, in 1904 built a water supply for Bloomfield. The water is taken from two bored wells, one a 6-inch well and the other a 10-inch, each reaching a depth of 275 feet. The water is pumped from the wells into a covered concrete reservoir 40 feet in diameter and 10 feet deep, with a capacity of 84,000 gallons, by Platt air compressors, which furnish 315 cubic feet of air per minute. The water is then pumped into a standpipe 12 feet in diameter and 40 feet high, with a capacity of 34,000 gallons, which furnishes the domestic pressure at 40 pounds. Direct pressure is used for fire protection at 110 pounds. The daily consumption is 50,000 gallons, which is sold entirely on meter rate on a sliding scale from 35 cents to 10 cents per thousand gallons, with no minimum charge. About 60 per cent. of the 2,200 population are supplied with city water. The pumping equipment, with a capacity of 1,500,000 gallons per day, consists of two

Duplex Smith-Vale pumps of 750,000 gallons each. The six examinations that have been made of this water show it to be of good quality. Four private supplies have been examined, two of which were of good quality and two were bad.

BLOOMINGTON.—The city of Bloomington built a water supply in 1893. The water is taken from three ponds fed principally by springs, which are located two and a half miles west of the city. The largest pond covers an area of 30 acres, the next in size covers 10 acres and the third 8 acres, all of which have an average depth of 13 feet. The water runs by gravity into a settling basin 250 feet square and 8 feet deep, the capacity being 3,750,000, which is used to allow the water to settle by natural sedimentation, as there is no chemical precipitation. The 10-acre pond was installed this last year in order to prevent a shortage of water such as was experienced the previous year, although the shortage was not due to the inadequacy of the original supply, but was caused principally by the enormous leakage which occurred in the reservoir dam. Considerable work has been done to prevent this leakage by repairing the dam and also by installing a means by which any water overflowing from the reservoir is collected in the pump well. As the ponds are located between the pumping station and the city, the water mains are laid through them. In one of these ponds a "T" supplied with a gate valve has been inserted in the main, and when the leakage that has been collected in the pump well is greater than is needed for the city supply, this valve is opened and the water pumped back into the pond. The water is pumped by direct pressure entirely, at 70 pounds for domestic purposes and 120 pounds for fire protection. The pumping capacity is 6,000,000 gallons daily, consisting of one Laidlaw Dunn Gordon crank and fly wheel cross compound engine of 3,000,000 gallons capacity, one direct acting compound Laidlaw Dunn Gordon of 2,000,000 gallons capacity, and one Smith-Vale engine of 1,000,000 capacity. The daily consumption is 700,000 gallons. The company has 15 miles of main, which supply one-half of the 10,000 population with city water, the rest using well supply. The water is sold principally on flat rate at \$12 per year, without sprinkling. If sprinkling privileges are included the rate is \$22 per year. Three examinations of this supply show it to be of good quality. Five private supplies have been examined, one of which was suitable for use, one was of doubtful quality, and three were unfit for drinking and domestic purposes.

DELPHI.—The city owns and operates its own supply, which was built in 1902. The water comes from three springs located on the hill east of town, and flows by gravity into two reservoirs, one of concrete, with a capacity of 500,000 gallons, and one of brick of 300,000 gallons capacity, both of which are covered. From these reservoirs the water is pumped into a standpipe, which furnishes the domestic pressure at 50 pounds. The fire pressure is direct at 80 pounds. The company has 486 services, which furnish two-thirds of the 3,000 population with city water. The water is sold entirely on flat rate at \$9 per year for a five room house with bath and toilet. Seven private supplies were examined, all of which were of good quality.

FRANKFORT.—The Frankfort Water Works Company, a private plant built in 1885, furnishes the city with its supply. The system consists of 19 drilled wells of an average depth of 80 feet. The wells are drilled through 20 feet of soil and blue clay, 1 foot of sand, 29 feet of blue clay, 19 feet of coarse gravel, 3 feet of blue clay and 17 feet of coarse gravel, which is the stratum from which the water is taken. Under this is 51 feet of blue clay. Only five of the wells are in use, as the others are not needed. Three of these are operated by a suction pump placed in a pump pit 23 feet deep. The water from a 6- and 8-inch well is raised by Roth Impeller pumps, driven by vertical electric motors. The water is pumped into two covered concrete reservoirs, one holding 188,000 gallons and the other 819,000 gallons, giving a total storage capacity of 1,007,000 gallons. The water is pumped from these reservoirs by direct pressure, at 50 pounds for domestic use and 110 pounds for fire protection, by one high duty Gaskell duplex compound engine of 4,000,000 daily capacity, and one Hughes cross compound of 3,000,000 daily capacity. The company has 25 miles of water mains, which supply about 90 per cent. of the 12,000 population with water. The average daily consumption is 850,000 gallons. The water is sold entirely on flat rate at \$12 per year for five room house with bath and toilet. Four analyses of this supply have been made, all of which show it to be of excellent quality. Four private supplies have been examined, three of which were of good quality and one doubtful.

GREENCASTLE.—The Greencastle Water Works Company, a private company, built a supply in 1887, taking its water from the Big Walnut stream. The water is taken through perforated tile, with the perforations on the bottom at a depth of 6 to 8 feet below the bottom of the stream. These tile are laid in gravel, with an interlying stratum of hard pan between it and the stream. The water is pumped from the river bed into a standpipe 22 feet in diameter and 144 feet high, which furnishes 75 pounds gravity pressure for domestic use. Direct pressure can be used if necessary. The pumping equipment has a capacity of 5,000,000 gallons daily, and consists of two Dean cross compound condensing pumps of 1,250,000 gallons each, and one Epping Carpenter triple expansion cross compound engine of 2,500,000 gallons daily. The daily consumption is 500,000 gallons. The company has 14 miles of main, which supplies about 75 per cent. of the 6,000 population with city water. About 50 per cent. of the services are metered at a rate of from 30 cents to 11 cents per 1,000 gallons, the flat rate for a five room house, bath and toilet being \$18 per year. Nine examinations of this water proved the water to be of good quality. Thirty private supplies have been examined, two of which were suitable for use and twenty were badly polluted.

GREENSBURG.—The Greensburg Water Company, a private concern established in 1889, supplies the city with water. The supply is taken from a system of 18 bored wells of an average depth of 75 feet. Ten of these wells are all that are needed to meet the present demand. The water is pumped into a brick well of 30,000 gallons capacity, from which it is pumped into the mains by direct pressure at 40 pounds for domestic use and 100 pounds for fire protection. There are two uncovered concrete and brick storage reservoirs with a total capacity of 500,000 gallons

that are only used for fire purposes. The company has 13 miles of main, which supplies two-thirds of the 7,000 population with city water. The pumping capacity is 3,000,000 gallons, consisting of two Blake compound pumps of 1,500,000 gallons each. About 600,000 gallons are used daily. The water is sold principally on flat rate, the average service being \$10, but where toilet and bath are installed the rate is \$12.50 per year. One examination made of this water showed it to be of good quality. Sixteen private supplies have been examined, eight of which were of good quality and eight badly polluted.

JEFFERSONVILLE.—The water works is owned and operated by a private company and was built in 1887. The water is taken from a system of 22 drilled wells at an average depth of 40 feet. The water is pumped into a standpipe 150 feet high and 15 feet in diameter, with a capacity of 200,000 gallons, which furnishes domestic pressure at 65 pounds. The well water is used exclusively for domestic purposes. For fire protection the Ohio river water is pumped into the mains at 125 pounds pressure. The company has 14 miles of main, which supplies about one-third of the 14,000 population with city water. The water is sold on flat rate at \$16.00 per year, including sprinkling purposes, as there are no services installed without it. Several examinations of the well water show it to be of good quality, but when the Ohio river water is pumped into the mains, the supply is wholly unsatisfactory for drinking and domestic purposes.

KOKOMO.—The works of the Kokomo Water Company, a private concern, owned by the American Water Works and Guarantee Co., of Pittsburgh, Pa., was built in 1884. The supply is taken from a system of 13 drilled wells, ranging in depth from 130 to 500 feet. The water is siphoned into a receiving well, from which it is pumped into a covered concrete storage reservoir of 8,000,000 gallons capacity. The pumping is done by one triple expansion Worthington pump of 3,000,000 capacity, one Hall compound pump of 2,000,000 capacity, and one Dean pump of 1,000,000 capacity, giving a total daily capacity of 6,000,000 gallons, which furnishes direct pressure for domestic use at 60 pounds. The pressure for fire protection is 110 pounds. The company has 15 miles of mains, which furnishes two-thirds of the 18,000 population with city water, the daily consumption being 2,000,000 gallons. The water is sold principally on flat rate at \$12 per year for a five room house with bath and toilet. Two examinations of this water showed it to be of good quality. Water from four private wells was examined; one was of good quality and three were unfit for use.

LAFAYETTE.—The city of Lafayette owns and operates its own water supply, which was built in 1875. The supply is taken from a system of 46 drilled wells, having an average depth of 38 feet, located in the bed of the Wabash river, the water in every case flowing to the surface. The water is pumped into the mains against the head of an open concrete reservoir of 4,200,000 gallons capacity, which furnishes gravity pressure for the down-town districts for domestic use at 65 pounds. The hill districts are supplied from this reservoir by direct pressure at 45 pounds. For fire protection direct pressure is used for the whole city at 80 pounds. A standpipe 30 inches in diameter and 6 feet high is used to give gravity

pressure at times when the reservoir is being cleaned. The company has 52 miles of mains and 4,000 services, which furnish about 80 per cent. of the 20,000 population with city water, the average daily consumption being 2,057,000 gallons. The pumping equipment for the hill district consists of two Worthington triple expansion pumps of 1,000,000 gallons capacity each. The lower station has two Worthington tandem compound condensing engines of 6,000,000 gallons daily capacity each. The water is sold principally upon flat rate at \$11 per year for a five-room house with bath and toilet. There are, however, 200 services metered on a rate from 20 cents to 6 cents per 1,000 gallons. Four analyses of this water showed it to be of good quality. Twelve private supplies were examined, ten of which were of good quality and two were bad.

WEST LAFAYETTE.—In 1893, a private company built a water works system for West Lafayette, taking its supply from a system of 11 drilled wells with an average depth of 70 feet. The water is pumped into a standpipe which is 3 feet in diameter and 50 feet high, with a capacity of 2,650 gallons. From the standpipe it is distributed by gravity at a pressure of 65 pounds for domestic use. The company has 8 miles of mains, which supply practically the whole of the 5,000 population with city water. The average daily consumption is 500,000 gallons and the pumping capacity is 1,500,000 gallons. The water is sold entirely on flat rate at \$11 per year for a five room house with bath and toilet. One examination of this water showed it to be of good quality. Two private well supplies were analyzed, both of which were of good quality.

LAWRENCEBURG.—A private company, consisting of a few of the citizens of the town, have constructed a small water works system this last year. The company lays the main line and those who desire the service, put in the laterals. The town has a population of 4,500, but at the present time there are but 80 services and one-half mile of main is installed. A contract has been let to a private manufacturing company for pumping the water, and one Cook pump has been installed for this purpose. The supply is taken from one driven well 75 feet deep, and is pumped into a tank of 3,200 gallons capacity. During the daytime direct pressure is given at 35 pounds, but as there is no water pumped at night the tank supply is used. The town has no fire protection, but this water can be used for fire protection as far as the mains are laid if needed. The water is sold on flat rate at \$8 per year. Eleven private supplies have been examined, nine of which were satisfactory for drinking and domestic purposes, and two were of doubtful quality.

LEBANON.—The city owns and operates its water works plant, which was built in 1894. The supply is taken from a system of drilled wells consisting of one large well 30 feet in diameter and 40 feet deep, having nine tubular wells inside going to a depth of from 50 feet to 240 feet. The water is pumped into a covered concrete reservoir of 500,000 gallons capacity by two Harris air lifts. From the reservoir it is pumped into a standpipe of 185,000 gallons capacity, which furnishes gravity pressure for domestic use at 52 pounds. For fire protection 80 pounds direct pressure is used. The pumping is done by two Gordon condensing pumps at 600,-

000 gallons daily capacity each. The company has 12 miles of main, which furnish 65 per cent. of the 6,000 population with city water. The average daily consumption is 500,000 gallons. The water is sold principally on flat rate at \$11 for a five room house with toilet and bath. Nine examinations were made, all of which showed the water to be of good quality. Eight private supplies were analyzed, four of which were of good quality, two were doubtful and two were bad.

MADISON.—The water works is owned by the city, but is operated by the Madison Machinery Company, which has a lease for pumping the water only, the city taking care of the revenue. The plant was built in 1871. The present supply is taken from a system of six wells that were sunk in the bed of the Ohio river in 1908, and the contract has been let for the installation of six more wells. These wells are placed 6 feet below the surface of the river bed and are 48 inches in diameter and 6 feet deep. The water is taken from the bottom of the wells through a suction pipe. They can only be operated when the river is high enough to give a sufficient head to keep them full. When the river is low the wells have to be abandoned and the water is pumped from the river direct into the mains. The city has a population of 10,000, one-half of which is supplied with city water. The company has 16 miles of water main. The water is pumped from the wells into a reservoir located on a hill, which furnishes domestic pressure at 45 pounds. The fire pressure is obtained by the use of steamers. The reservoir is 80 feet in diameter and 20 feet deep, the capacity being 720,000 gallons. The average consumption is about 1,100,000 gallons daily. The pumping equipment, having a capacity of 2,000,000 gallons, consists of two Worthington vertical compound condensing pumps of 1,000,000 gallons capacity each. Water is sold on flat rate entirely. The rate for domestic purpose and house use, including sprinkling, is \$11. There are times when this water is of good quality, but at other times it is entirely unsatisfactory. Twenty-one private supplies have been examined, five of which were of good quality, one was doubtful and fifteen were bad.

MARTINSVILLE.—In 1893 the city built a water works which gets its supply from one brick walled well 30 feet in diameter and 30 feet deep, having a capacity of 1,600,000 gallons, one-half of this amount is usually available. The well is dug in the gravel about one and one-fourth miles from White River and pollution of adjacent areas is prevented by an ordinance which prohibits the dumping of any sewage within five blocks of this well. There is no other storage reservoir or standpipe and as this well furnishes a good flow, no difficulty as to the quantity of water has ever been experienced. The water is pumped direct into the mains furnishing a pressure of 65 pounds for domestic use and 100 pounds for fire protection. The consumption is 500,000 gallons daily. The pumping capacity is 4,000,000 gallons daily and the pumping equipment consists of two Gordon duplex pumps of 1,000,000 gallons each and one Myre Gear Gordon high duty crank and fly wheel engine of 2,000,000 gallons capacity. The Company has 12 miles of main which supplies 75 per cent. of the 5,500 population with city water. The water is sold entirely on flat rate at \$10 per year for an average five-room house with bath and toilet. Two exam-

inations of this water showed it to be of good quality. Twenty-three private supplies have been analyzed, twelve of which were good and three doubtful and eight were bad.

MARION.—In 1877 the city of Marion built a water works plant, obtaining its supply from a system of 14 bored wells, having an average depth of 200 feet, all of which reach the limestone stratum. The water is taken from the wells by air lifts and stored in a system of four covered reservoirs. Reservoir No. 1 is 25 feet deep and 20 feet in diameter with a capacity of 589,000 gallons. No. 2 is 13½ feet deep and 53 feet in diameter with a capacity of 224,000 gallons. No. 3 is 15 feet deep and 94 feet in diameter with a capacity of 750,000 gallons. No. 4 is 16 feet deep and 152 feet in diameter with a capacity of 2,000,000 gallons, giving a total storage capacity of 3,082,900 gallons or two days' supply, as the average consumption is one and one-half million gallons daily. The water is supplied by direct pressure with a Fairbanks-Morse pump of 4,000,000 gallons capacity per day and a Snow horizontal three-crank triple expansion high duty engine of 5,000,000 gallons daily capacity. The Company has 38 miles of main which supplies 70 per cent. of the 25,000 population with city water. The water is sold on both meter and flat rate basis, the meter scale ranging from 16 to 6 cents per thousand gallons and the flat rate averaging about \$8.00 per year for domestic use. Six analyses of this water have been made during the year, all of which showed the water to be of good quality. Seven private wells have been examined, two of which were good, two doubtful and three bad. Twenty-three examinations of the well water for the National Soldiers Home were made, sixteen of which were of good quality and seven were unfit for use.

MOORESVILLE.—In 1902 a private company built the water works supply of this town which consists of two driven wells, one 52 feet deep and the other 311 feet deep. The water is taken from the wells by Cook suction lifts and pumped into a covered concrete reservoir of 50,000 gallons capacity. The water is pumped through four miles of main which supplies one-half the 3,500 population with city water by one Dean duplex pump, of one million gallons daily capacity. The daily pumpage is 15,000 gallons. Direct pressure is furnished for domestic use at 35 pounds and for fire protection at 70 pounds. The one analysis made of this supply shows it to be of good quality. Thirteen private supplies have been analyzed, seven being of good quality while six were bad.

MT. VERNON.—The Mt. Vernon water plant, owned by the American Water Works and Guarantee Company of Pittsburg, Pa., was built in 1886. A filtration plant was installed in 1903. The supply is taken from the Ohio river. The water is taken into a pump well from the river, from which it is pumped by two Worthington low-service pumps into a settling basin constructed of iron and having a capacity of 100,000 gallons. After passing through the settling basin the water is filtered by a mechanical filtration plant of the New York Continental Jewell type, having in use four one-half million gallon units. The water flows by gravity into a concrete reservoir which occupies the lower portion of the filter house. The water is then pumped into a standpipe of 196,000 gallons capacity, which furnishes the domestic pressure at 70 pounds. If necessary direct pressure

can be used for fire protection at 140 pounds pressure. The pumping is done by one horizontal triple expansion Worthington engine of 2,000,000 daily capacity and one Epping-Carpenter engine of 2,000,000 capacity. One examination of this water showed it to be of good quality. Three private supplies have been examined, two of which were good and one bad.

MUNCIE.—The Muncie Water Works Company, owned by the American Water Works and Guarantee Company of Pittsburg, Pa., supplies the city of Muncie with water, taken from a combined system of deep wells, the White River and Buck Creek. The entire supply is filtered before being pumped into the mains. The well water is of satisfactory quality from a sanitary standpoint, but contains a large quantity of iron, which, after coming in contact with the air, precipitates such an amount of hydrate of iron that the water is exceedingly turbid. In order to remove this iron, the water, after being siphoned from the deep wells into a receiving well, is pumped by a low service Worthington triple-expansion engine of 3,500,000 capacity into a sheet iron tank that contains several layers of porous plates through which the water is allowed to shower and in this way precipitates practically all of the iron present. From this aerating device the water is filtered through three steel pressure filters of 2,000,000 gallon daily capacity and passes into the reservoir of 1,200,000 gallons capacity. The water from Buck Creek is piped into settling tanks, after which it is filtered through six rectangular concrete mechanical gravity filters of 500,000 daily capacity each. The company has fifty-six miles of water main that supplies about two-thirds of a population of 30,000 with water at 40 pounds pressure. The pressure for fire protection is 120 pounds. The daily consumption is 2,500,000 gallons. The entire pumping capacity is 17,000,000 and the equipment consists of one Blake pump of 2,500,000 gallons capacity, one Buffalo pump of 2,500,000 gallons capacity, two Worthington compound duplex pumps of 2,000,000 gallons capacity each, one triple-expansion Worthington pump of 4,500,000 gallons capacity, one Gordon compound duplex pump of 3,500,000 gallons capacity. The water is sold almost entirely on flat rate at \$9 per year for house use, including bath and closet. Ten examinations of this supply have been made in the last two years, all of which show the water to be of good quality. Thirty-one private supplies have been examined, twenty-one of which were of good quality, ten were doubtful and eight bad.

NORTH VERNON.—The water works is owned by the city and operated under the supervision of the City Council. The supply is taken from a storage reservoir 75 feet wide and about one-half mile long, with an average depth of 5 feet, which is made by the damming up of Muscatatuck Creek. It is estimated that this reservoir contains about 50,000,000 gallons of water. From this reservoir the water is pumped into a standpipe 100 feet high and 12 feet in diameter by a pump of 85,000 gallons capacity. The standpipe furnishes both domestic and fire pressure at 65 pounds. Direct pressure can be furnished, but it is not necessary, as the city is equipped with fire engines. A dam is now being constructed above the present reservoir which will give an additional storage capacity of 187,000,000 gallons. The company has eight miles of mains, which supply about one-half of the 4,000 population with city water. The daily pump-

age is 500,000 gallons. The pumps, with a capacity of 3,000,000 gallons daily, consist of one Laidlaw-Dunn Gordon engine of 2,000,000 gallons capacity and one Laidlaw-Dunn Gordon engine of 1,000,000 gallons capacity. The principal consumers are the railroad shops, which buy water by meter on a sliding scale of from 25 cents to 4 cents per 1,000 gallons. The private consumers are on a flat rate at \$13 per year. Four analyses have shown the water to be of good quality. Five private supplies have been examined, all of which were of good quality.

PRINCETON.—The Princeton Water and Light Company built a water works system in 1893. The supply is taken from the Patokee River and pumped into a standpipe of 120,000 gallons capacity, which furnishes the city with gravity pressure at 70 pounds. The water is pumped into the standpipe with one Burr vertical pump of 2,000,000 gallons capacity and one Gordon horizontal pump of 1,000,000 capacity. The company has thirteen miles of main, which supplies about 50 per cent. of the entire population with water, and is sold on flat rate entirely at \$8 per year for domestic use. The water is soft in character and of as good quality as could be expected from any surface flow, as it receives but very little upstream sewage at this point, but at times it becomes exceedingly muddy after heavy rains, when the land drainage from the surrounding country is washed into it, and for this reason cannot be called a suitable supply for drinking purposes. Five private supplies have been examined, two of which were good, two doubtful and one bad.

RICHMOND.—The pumping station of the Richmond city water works, a private corporation, was built in 1884, on the east branch of the White Water river, two and one-half miles from the city. The supply is taken from a system of three gallery wells, having a drainage of eight square miles. Gallery No. 1 is parallel with the stream and about 24 feet from it. It is 2x3 feet in section and 1,000 feet in length. Gallery No. 2, built in 1887, is one-fourth of a mile beyond gallery No. 1. Its bottom is 12 feet below the surface, the walls are laid in stone 10 feet thick and 3½ feet high, with a distance of 3 feet between the walls. A two-ring brick arch is laid on top of these walls. The length of this gallery is 500 feet. It has not given good results and is not depended upon. Gallery No. 3, 1,000 feet in length, is located one and one-half miles from the pumping station, to which the water is carried by a 12-inch iron pipe. All of these galleries derive their supply from the land side and not from the river side. A 10,000,000-gallon reservoir, with cement bottom and sides, is situated one mile from and at an elevation of 180 feet above the pumping station. In 1896 it was found necessary to secure an additional supply. This was obtained by means of a 16-inch siphon line three miles in length and extending into a different water-shed. This water-shed has an area of about two and one-half square miles, with a very deep underlayer of porous gravel, lying a foot or two below the subsoil of black loam. A brick well 18 feet in diameter and 14 feet in depth was constructed near the center of this water-shed. Twenty pipes 2 inches in diameter are driven 10 or 15 feet into the gravel below the bottom of the well. The present daily pumpage is about 2,000,000 gallons and supplies 90 per cent. of the 21,000 population with city water. The company has about forty miles

of mains. The reservoir furnishes the domestic pressure of 65 pounds, the fire protection being direct pressure at 110 pounds. The total pumping capacity is 10,000,000 gallons daily. The water is sold principally by meter, the rate being on the sliding scale from 25 to 6 cents per 1,000 gallons. Three different analyses show this water to be of good quality. Ten private supplies were examined, five of which were of good quality, one doubtful and four bad.

RUSHVILLE.—In 1886 the city built a system of eleven tubular wells, eight of which are now in operation, which average from 69 to 215 feet in depth. The water from these wells is pumped into a covered concrete reservoir of 400,000 gallons capacity by Harris air lifts from four of the 6-inch wells and by Indiana air lifts from the five 4-inch wells and two of the 6-inch wells. From the reservoir the water is pumped into the mains with two Worthington high-duty pumps of 1,500,000 daily capacity each, furnishing direct pressure for domestic use at 50 pounds and for fire protection at 100 pounds. The company has fourteen miles of water mains which furnishes 87 per cent. of the 6,000 population with 1,500,000 gallons daily. The water is sold entirely on flat rate at \$12 per year for a five-room house and bath with toilet. There is a large amount of iron in the water, which often causes it to be turbid. Ten private supplies have been analyzed, only three of which were of satisfactory quality.

SHELBYVILLE.—The Citizens Water and Light Plant, owned by Street, Wykes & Company, of New York City, was built in 1886. It consists of a system of deep driven wells, having one large and eight smaller ones, which furnish the city and its 15,000 population with water for fire protection at 110 pounds pressure. The company has 1,700 services installed, which supply about one-half the city with water for domestic use at 50 pounds direct pressure. About 1,000,000 gallons are pumped daily. The water is sold principally on flat rate at \$12.50 per year for a five-room house, bath and toilet. There are a few meters in use, in which case the water is sold on a sliding scale from 30 to 12½ cents per thousand gallons. This water has been examined three different times and found to be in good condition. Seven analyses have been made of private supplies, five of which were found to be of good quality and two were of doubtful character.

TIPTON.—In 1892 the city built a system of thirteen deep wells which furnishes 75 per cent. of the 7,000 population with water. It is pumped by two air lifts of 500,000 gallons capacity and stored in two brick walled cisterns, one being 18 feet deep and 24 feet in diameter and the other 24 feet deep and 20 feet in diameter. Both cisterns are covered. From these wells the water is pumped by direct pressure at 35 pounds for domestic use and 120 pounds for fire protection by two McGowan compound duplex pumps of 1,500,000 gallons each, giving a total pumping capacity of 3,000,000 gallons daily. The consumption is 400,000 gallons daily. The company has twenty-four miles of mains and ninety-five fire hydrants. About 30 per cent. of the services are metered, having a rate from 15 to 7 cents per thousand gallons, the other 70 per cent. are on flat rate at \$12 per year without sprinkling. Eight private supplies have been examined, six of which were of good quality and two were bad.

VERNON.—The town of Vernon owns and operates its own water supply, which was built in 1893. The supply is taken direct from Muscutt Creek. The water is pumped into a standpipe of 30,000 gallons capacity and furnishes domestic pressure at 67 pounds. For fire protection direct pressure is used at 100 pounds. The company has one and one-half miles of mains, which furnish about 35 per cent. of the 600 population with water, with an average of 15,000 gallons of water per day. The equipment, having a pumping capacity of 400,000 gallons, consists of two Dean pumps of 200,000 gallons daily capacity each. The water is sold entirely upon flat rate at \$5 per year. The water is not suitable for drinking purposes, as all the sewage from the town of North Vernon enters the creek about two miles north of the water works intake. In the summer-time, when the creek is low, about the only water in the creek at this point is the North Vernon sewage. Four private supplies have been examined, all of which were of good quality.

WINCHESTER.—The Citizens' Water and Light Company, a private concern, in 1900 built a system consisting of three drilled wells 200 feet deep. The water is pumped into a brick reservoir of 2,300,000 gallons capacity by suction pumps. From the reservoir the water is pumped into the mains by two pumps of 1,000,000 gallons capacity each, furnishing direct pressure for domestic purposes at 45 pounds and for fire protection at 90 pounds. The company has eleven miles of water mains, which supply 35 per cent. of the 5,000 population with city water. The rest use water from private wells. About 25 per cent. of the services are metered, with a sliding rate of 25 cents to 7 cents per 1,000 gallons, the flat rate for domestic use and bath being \$9 per year. Five analyses made of this water show the supply to be of satisfactory quality. Fourteen private wells have been examined, nine of which were of good quality and five showed sewage pollution.

SPECIAL REPORTS OF WATER AND SEWAGE INVESTIGATIONS.

The laboratory of hygiene can be of no greater service in protecting the health of the public than by controlling the character of public water supplies and by regulating the disposal of sewage. Ample authority to carry on this work is now given the State Board of Health by the stream pollution law which was passed at the legislative session of 1909. Already acting under this law, the public water supplies and sewage disposal systems of forty-one cities have been thoroughly investigated. Even before the law was passed the superintendents of the public water supplies of the state realized the worth of the laboratory to them, and made frequent use of it in checking up and in improving the operation of their filtration systems.

During the fiscal year, assistance has been rendered eleven cities and water works superintendents. The reports of the investigations made are here given in full. The surveys made for the cities of Vincennes, Princeton and Indianapolis are to be found on pages 129, 137 and 145.

REPORT OF THE POLLUTION OF THE WATER SUPPLY OF THE
CITY OF ALEXANDRIA, OCCURRING IN THE MONTH
OF MAY, 1909.

J. H. BREWSTER.

The water supply of the city of Alexandria, which furnishes water for approximately 7,000 people, is taken from a system of deep wells. The water is pumped into a standpipe of 250,000 gallons capacity and from which the water is furnished for both domestic use and fire purposes. The Water Company can also, if necessary, supply direct pressure for fire protection. The water comes from veins about 400 feet deep located in the Hudson River limestone between the Niagara limestone and the Trenton Rock. It is of the usual type of deep well waters, containing normal amounts of carbonates and sulphates of lime and magnesia, but is comparatively low in salt and iron. The system comprises seven wells and has been of an excellent quality for drinking purposes since the installation of the system, in 1894, until the present time. The wells are located in a straight line, or nearly so, and will be referred to hereinafter by consecutive numbers, the most southerly well being No. 1 and running in order toward the north.

A few days prior to this investigation a strong odor coming from the water was noticed. It was thought that the cause might be in the standpipe or the cistern into which the well water is first pumped. These were thoroughly cleaned and the water mains properly flushed, but to no effect, and in fact the odor was even more noticeable than before. On April 28 a sample was submitted to the State Laboratory by Dr. E. J. Beardsley for examination. This was apparently in good condition, and no odor could be detected except a slight odor of sulphuretted hydrogen. It was afterwards learned that when this sample was collected the Water Company had been pumping the water from well No. 1, which, as will be shown, is located on a different vein from the other wells and at no time has had any sewage odor. As the conditions were apparently becoming worse, the State Board of Health was requested to make a personal survey of the supply and advise as to the most feasible way of doing away with the trouble. The investigation was begun on May 3, 1909, and at that time the odor was so strong that it could be detected several hundred yards from the pumping station.

Upon investigation it was found that there were a great many abandoned gas wells in the vicinity, some of which had not been properly plugged, and it was suggested that there might be a connection between these wells and the water supply. A search for such wells was made, which resulted in the finding of an old cistern located in an abandoned

brick yard now used by the city garbage master for dumping purposes and as a burial place for dead animals. This cistern was partly filled with spoiled sauer kraut, fish brine and dead hogs and dogs, which gave off an atrocious odor that was very similar to the odor coming from the city water. The brick company dug this cistern, which was 10 feet in diameter and 15 feet deep, around an old gas well and lined it with brick for the purpose of pumping water from the abandoned gas well into it and in this way maintained their own water supply. Owing to the similarity of the odor from the cistern and that of the water, it was decided that the gas well had never been plugged and that it had a connection with the city supply, thus allowing the garbage to get into the water. It was ordered that all refuse be removed and the cistern thoroughly cleaned. After this was done it was found that the well had never been plugged and that the casing and drive pipe were still in the well, which was also full of water.

Preparations were immediately made for testing to find out whether or not this well had any connection with the city supply. The chlorine contents of each of the seven wells and also of the cistern was determined, the results being as follows:

Well No. 1,	6	parts	chlorine	per	million.				
" " 2,	37	"	"	"	"	"	"	"	"
" " 3,	63	"	"	"	"	"	"	"	"
" " 4,	31	"	"	"	"	"	"	"	"
" " 5,	24	"	"	"	"	"	"	"	"
" " 6,	10	"	"	"	"	"	"	"	"
" " 7,	93	"	"	"	"	"	"	"	"
Cistern	73	"	"	"	"	"	"	"	"

Salt was then poured into the mouth of the gas well and all of the pumps at the water works station run at their full capacity, the water being allowed to overflow into the sewer. A few minutes after the speed of the pumps had been increased, the water in the gas well began to lower. Tests for chlorine were then made hourly on water from all of the wells. One hour after the salt had been added at the gas well an increase in the chlorine contents of wells Nos. 3, 5, 6 and 7 was observed. The chlorine content of water from No. 1 remained unchanged. Determinations from wells Nos. 2 and 4 could not be made because the increase in pumpage lowered the water in the wells to such an extent that samples could not be taken. At this time the chlorine content in well No. 1 was six parts per million. Well No. 3 was 114 parts, showing an increase of 51 parts per million. Well No. 5 contained 44 parts, an increase of 20 parts per million. Well No. 6 had 14 parts, an increase of 4 parts, and well No. 7 had 102 parts, an increase of 9 parts per million. During the next three hours a slight increase in the chlorine was noted in well No. 3, but the others remained practically unchanged. Four hours after the salt had been added the gas well was given another dosing of salt. One hour after this addition the chlorine in well No. 1 is still unchanged. Well No. 3 showed an increase of 10 more parts per million. Well No. 5 had an increase of 15 parts, well No. 6, 16 parts, and well No. 7 an increase of 20 parts. At this time the cistern showed an increase of 5 parts per million. An analy-

sis of the water at 11 p. m. showed that the salt content was diminishing as the chlorine in well No. 3 had dropped from 140 to 115 parts. Well No. 5 dropped from 65 to 40 parts; well No. 6 from 30 to 20 parts and well No. 7 from 130 to 100 parts.

The pumps were kept running at their full capacity during the night and in the morning the chlorine contents showed that there was some of the salt still in the water, although it was growing less and the odor from the water was not quite so strong.

These tests, together with the lowering of the water in gas well when the pumps were put in full operation, showed conclusively that the gas well had direct connection with the water supply and on account of the similarity of the odors coming from both places, affirmed the belief that the garbage which had been thrown in the cistern was the source of all trouble. When these experiments had been completed the State Gas Inspector, who had been notified of the existing conditions, plugged the well as directed by the State laws.

Samples of the water collected from wells Nos. 1, 3, 5, 7 and the cistern were analyzed at the State Laboratory. Aside from their strong odor, there was nothing in the composition of these waters to indicate them to be of a bad quality. The reason for this is doubtless due to the fact that decomposition of organic matter had not taken place to any extent, and that though the garbage itself had not gotten into the water supply, its odor had been dissolved by it. The chlorine contents were abnormally high, due to the salt that had been put in the well.

After the gas well was plugged and cleaned, the odor gradually disappeared. until on May 12 no odor was noticeable at the pumping station. On that date samples from wells 1 and 2 were sent to the laboratory for analysis. Well No. 1 was in the same unchanged condition, but well No. 2 still had a strong odor. This was undoubtedly due to the fact that the sample was collected from the water standing in the well above the mouth of the suction line, which had not been pumped out and which still retained the odor. Another sample of water was submitted to the laboratory on May 19, which showed no evidence of pollution and which had no odor.

The investigations made and the results of these analyses show that beyond doubt the entire trouble was caused by garbage being emptied into the gas well, and this conclusion is substantiated by the fact that the condition has been entirely relieved by plugging this well. The investigation also shows that wells Nos. 2, 3, 4, 5, 6 and 7 are supplied in part at least by the same vein of water, as they were all affected by the salt that was introduced into the gas well. Although tests could not be made from wells 2 and 4, yet the odor coming from these wells was just as strong as from the others. Well No. 1, however, is undoubtedly on an entirely different vein, as it was not affected by the salt. This well had no odor at any time and the fact that it contains sulphur while the others do not, is an additional proof that it has no connection with the other wells.

Great care should be taken of the present system of water supply. as Alexandria is almost entirely dependent upon these deep wells. There are no lakes surrounding the city and there are no streams from which

surface water can be obtained, and if for any reason these wells should become exhausted or foul, the water company would be obliged to undergo an enormous expense in endeavoring to locate new wells having no connection with the vein now being drawn upon. If these new wells could not be located, the only other water obtainable would be that from White river, which is about twelve miles away.

In consideration of these facts and since it is probable that there are many abandoned gas wells in and around Alexandria of which there is no record, and which may not have been properly plugged, a very careful survey should be made of all the country within a radius of several miles in order to prevent future trouble similar in character to that just experienced.

Tables showing the complete sanitary analyses of samples from the wells on different dates and also of the chlorine content of the waters during the period of investigation, are appended.

WATER ANALYSES.
(Parts in 100,000.)

Lab. No.	Date of Collection.	Odor.	Color.	Turbidity.	Sediment.	AMMONIA.		NITROGEN AS		Chlorine	Solids.		Hardness.	Iron.	Source of Sample.	B. Coli.
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
2751	1909.	Very slight*	4	None.	V. sl.	0130	0040	0200	0002	1.10	37.00	31.40	31.00	.04	City water.	—
2755	April 4	Strong sewage.	15	Slight.	Slight.	0210	0040	0050	0001	9.00	51.60	42.00	32.40	.12	City water.	—
2762	May 5	Strong sewage.	15	V. sl.	Slight.	0220	0050	0100	0001	9.00	56.00	43.20	32.40	.12	City water.	—
2764	May 5	Very slight.	9	V. sl.	V. sl.	0230	0030	0100	0000	6.00	38.80	32.80	32.60	.06	Well No. 1.	—
2761	May 5	Strong sewage.	4	V. sl.	Slight.	0160	0035	0400	0001	13.00	61.80	52.60	30.60	.06	Well No. 3.	—
2763	May 5	Strong sewage.	2	None.	V. sl.	0250	0035	0050	0001	6.00	44.40	35.00	32.60	.03	Well No. 5.	—
2760	May 5	Strong sewage.	9	V. sl.	Slight.	0260	0040	0100	0001	12.00	65.00	48.00	33.40	.07	Well No. 7.	—
2762	May 12	Very slight.	4	None.	None.	0220	0035	0050	0000	3.00	38.60	33.80	32.00	.04	Well No. 1.	—
2781	May 12	Strong sewage.	20	V. sl.	V. sl.	0260	0050	0100	0001	3.00	56.00	39.03	32.60	.03	Well No. 2.	—
2789	May 18	None.	9	None.	None.	0210	0060	0010	0004	1.70	35.40	33.20	30.00	.02	Removoir city supply.	—

*Hydrogen sulphide.

CHLORINE IN PARTS PER 1,000,000.

MAY 4, 1909.

Time.	Well No. 1.	Well No. 2.	Well No. 3.	Well No. 4.	Well No. 5.	Well No. 6.	Well No. 7.	Cistern.
11 A. M.....	6	37	63	31	24	10	93	75
12 N.....	6	*	114	*	44	14	102	75
1 P. M.....	6	*	127	*	45	14	107	75
2 P. M.....	6	*	130	*	45	14	107	75
3 P. M.....	6	*	130	*	45	14	110	75
4 P. M.....	6	*	140	*	60	30	130	80
5 P. M.....	6	*	140	*	65	30	130	85
11 P. M.....	6	*	115	*	40	20	100	90

*Not able to collect sample.

MAY 5, 1909.

8 A. M.....	6	*	110	*	35	17	98	85
12 N.....	6	*	110	*	30	17	100	85

*Not able to collect sample.

**REPORT ON THE PLANS FOR A SEWAGE DISPOSAL SYSTEM FOR
THE CITY OF GREENCASTLE, IND., AS PREPARED BY THE
RIGGS-SHERMAN COMPANY, TOLEDO, OHIO.**

J. H. BREWSTER.

The plans consist of a map of the city of Greencastle, Ind., with elevations, and shows the arrangement for carrying off the sewage to a point north of the city, where it will go through a sewage disposal system before entering Black Walnut creek. This creek empties into Eel river, which in turn carries the water to White river. The map submitted indicates only the direction in which the city sewage is to flow and the depth of the manholes. No idea is given as to the grades of the sewers nor their size. From the map, the system seems to be nicely laid out, and it does not appear that the sewage in any place is required to run up hill, but some idea should be given as to the capability of the sewers to carry all the sewage produced throughout the city, and also some statement as to whether or not the system is to be a combined system carrying off both sanitary sewage and storm flow, or simply one to take care of the sanitary sewage and thus requiring some other disposal of the storm flow, if there is not already one installed.

The blue print map showing the sewage disposal system is very incomplete in detail, and having no idea of the amount of sewage to be cared for, it is impossible to state whether or not the septic tank and filters are of adequate capacity to take care of the amount of sewage that will be produced.

The septic tank has baffle walls extending from the top to within a short distance of the bottom. The flow of sewage is indicated as being

entirely below these baffle walls, which leaves a space of several feet for sewage to collect and coagulate, with no outlet to the filters. Owing to the lack of knowledge as to the method that is proposed for the operation of this plant, it would seem that the installation of these baffle walls as they are now indicated will reduce the capacity of the tank, so that the length of time that the sewage will be allowed to remain is limited to the distance from the bottom of these baffle walls to the bottom of the septic tank. If this is true, the velocity of the flow will be increased materially and the time for septic action will be reduced to about one-fourth of what could be had if these baffle walls were not installed or if they were installed in a different way.

Another feature that needs explanation, is the 14-inch cast iron pipe overflow from the filter into the sedimentation basin. Unless some good reason is given for this overflow, it should be entirely eliminated. Again, owing to the lack of knowledge of the scheme by which this plant is to be operated, I am at a loss to know why these basins are so installed.

Knowledge is also desired as to the type of the sprinkling nozzle that is to be installed and the material that is to be used in the bed. The underdrains are indicated in this design as being several feet apart. If this plant is of the ordinary type of sprinkling filters, it is, in my opinion, not sufficiently drained.

Information should also be furnished as to the quality of the effluent that will come from this plant in order to determine whether or not the proposed ideas will at all be satisfactory.

Before these plans are approved, a detailed description and profile maps of the system of sanitary sewage and sewage disposal proposed, should be furnished, either in writing or in a personal interview with the designing engineers.

THE SEWAGE DISPOSAL SYSTEM AT FORT BENJAMIN HARRISON.

JUNE 5, 1909.

P. C. Fauntleroy, Major, Medical Corps, U. S. Army, Fort Benjamin Harrison, Indiana :

Dear Sir—In reply to your request of May 25, 1909, asking information as to whether or not the samples of sewage from the septic tank of the sewage disposal system at Fort Benjamin Harrison contain B. Coll in large or small quantities, and for an opinion as to the condition of this effluent, permit me to say that the sample submitted to the State Laboratory June 1, 1909, contained 1,580,000 bacteria with evidence of B. Coll present to the following extent :

One 1 c. c. showing +
 Ten 1/10 c. c. showing 10 +, 0 —
 Five 1/1000 c. c. showing 4 +, 1 —

With B. Coll present to this extent, it is taken as evident that they are present in large quantities. This is the only sample upon which an opinion can be given, as examinations of this character were not made prior to the recent request. While visiting this plant on June 2d, it was learned that the contact beds and the filter beds have become so foul

that it is impossible to pass any sewage through them. One section of the distributing tile in one of the contact beds which had been removed was completely filled with refuse matter. With this condition existing it is of course impossible for the sewage to undergo the complete treatment designed, and with this most important part of the treatment omitted, the effluent will not and cannot be expected to attain the efficiency that is called for in a memorandum received from Captain F. W. Palmer, which requires that the effluent shall be clear, colorless and odorless and non-putrescible. In the number of samples that had been submitted it will be noticed that they are neither clear, colorless or non-putrescible, and that the characteristic sewage odor is always observed.

That the bacterial content is entirely too high can be readily seen by a comparison of this plant with that of the sewage plant of Saratoga, New York, where the effluent is practically sterile, with no evidence of B. Coll, and is often a better quality of water than is delivered to the people of that city for drinking purposes, and which, as a matter of fact, is used by the operators and caretakers entirely for their drinking water.

It was also learned that the plant is caring for an average of 368,000 gallons of sewage daily, with a maximum reaching 400,000 gallons. The septic tanks have a total capacity of 132,536 gallons, which is undoubtedly ample to care for the present amount of sewage. The filter bed is approximately a one-half acre bed, and should not be compelled to filter sewage at a rate of much over 250,000 gallons per acre, or 125,000 gallons per day. It can be readily seen that with the present amount of sewage to be disposed of, this bed must filter from three to three and a half times the amount it should. This fact in itself shows that the plant cannot do the work desired of it.

As to an opinion of the quality of this effluent, we can only say that in no way does it reach the requirements of the State Board of Health, or that of the present stream pollution laws, Chapter 24, Acts 1909, section 3 of which reads as follows:

"Whenever the State Board of Health shall, on investigation voluntarily instituted by it or instituted after complaint filed as in sections one and two of this act mentioned, find that any water purification works or sewage purification works, by reason of incompetent or inefficient supervision of operation are not producing an effluent as pure as might reasonably be obtained from these works, and that, by reason thereof any public water supply has become impure or dangerous to health, or that any stream, water course, river, spring, lake or pond has become materially polluted or has become a public nuisance, said board shall issue an order to the municipality, corporation, or other person having charge of or operating such purification works, requiring that the effluent thereof shall be made as pure as might be reasonably expected from such plant, if properly operated, and as shall be satisfactory to said board. And in such order said board shall name a reasonable time within which the order shall be complied with. If such order shall not, within such time, be complied with, the State Board of Health shall order the offender to appoint, within ten days, a competent person, approved by said State Board of Health, whose salary shall be paid by the municipality, corporation or firm to whom the order is addressed, to take charge of and to

superintend the operation of such purification plant or works, to the end that the effluent of such works shall be made as pure as might reasonably be expected from them when properly operated, and shall be satisfactory to said State Board of Health."

That the effluent is damaging to any stream into which it runs is plainly shown by the analysis, and that if long continued it would be a public nuisance is readily determined by the odor that is noticed at the outlet into the ravine when the septic tanks are discharging. The opinion of the State Board of Health as to the efficiency of this plant may be expressed as follows: If this plant belonged to any municipality, person, firm or corporation in the State of Indiana, an effluent of the kind delivered by it would not be tolerated and immediate steps for better purification would be insisted upon.

Yours very truly,

H. E. BAERNARD,
Chemist, State Board of Health.

THE WATER SUPPLY OF THE NATIONAL SOLDIERS' HOME, MARION, INDIANA.

The water supply of the National Soldiers' Home has for years been furnished largely by wells driven in gravel. The possible failure of these wells to supply the amount of water required by the institution prompted the installation of additional wells. These wells, six in number, are located in territory adjacent to the Mississinewa river, on the area known as "The Garden." The wells vary in depth as follows:

No. 1.....	232 feet.
No. 2.....	254 feet.
No. 3.....	302 feet.
No. 4.....	238 feet.
No. 5.....	134 feet.
No. 6.....	216 feet.

These wells are connected by pipe line meeting at well No. 1, where a pump house is built supplied with electric pump. Each well is so piped that it can be pumped independently of the other wells.

Water from these wells has been analyzed several times and results obtained are most unusual, since they show a water varying greatly in character, and in most cases heavily contaminated by salt water. The presence of Colon Bacilli is also indicative of sewage pollution.

The chlorine content of well

No. 1 is.....	10.5 per 100,000.
No. 2 is.....	44.0 per 100,000.
No. 3 is.....	42.0 per 100,000.
No. 4 is.....	43.0 per 100,000.
No. 5 is.....	44.0 per 100,000.
No. 6 is.....	9.0 per 100,000.

It appears that the water in wells Nos. 1 and 6 is derived from an entirely different stratum than the water in wells Nos. 2, 3, 4 and 5. This

is a most unusual condition, inasmuch as well No. 3 is 302 feet deep, No. 4, 238 feet deep and well No. 5, 134 feet deep, while the wells furnishing the less heavily polluted waters, located only 150 feet from these wells, are sunk to a depth of 232 feet and 216 feet respectively, and tap a strata furnishing an entirely different water. This can only be explained by the presence of faults in the strata, and the consequent formation of independent pockets which are supplied with water originating from different sources than those supplying the other wells. It at first appeared that the character of the water was influenced by the inflow from the Mississinewa river, which flows but a few hundred feet beyond the area in which the wells are bored. Analysis of the river water shows, however, that the chlorine content is decidedly higher than that in the most heavily contaminated well. The hardness is also somewhat higher, and in every instance the mineral content is different in character from that of the well water. It is reasonable to suppose, therefore, that the water from the river does not reach the water-bearing strata tapped by the wells, and is not responsible for the Colon Bacilli found in the well water.

The fact that Gas City and Jonesboro are located on ground somewhat higher than "The Garden," suggested possible pollution by the run-off from these thickly populated towns. The study of the geological formation as shown by data in the possession of well drillers, indicates a break in the limestone between Jonesboro and the Soldiers' Home, and the presence of a very deep ravine following a southwesterly course away from the river. There seems to be no doubt about the existence of this break in the limestone, and, such being the case, pollution from Jonesboro and Gas City is impossible.

The only source of salt water and bacteria indicating sewage pollution must be from the north or northwest, toward the city of Marion. It is evident that the run-off from the area on which the city is situated is not responsible for this condition. The territory surrounding Marion has, since the discovery of gas, been tapped by hundreds of gas wells. Most of these wells have been abandoned, and, in some instances have been plugged or closed properly. Other wells, according to the statements of well drillers and the superintendent of the Marion Water Works, have not been closed, and now exist as funnels or drains into which surface water pours. Such a well is located but a short distance north of "The Garden" on the farm known as the "Caldwell place." This well receives not only farm drainage and the run-off from an inhabited territory, but also receives some sewage. There is no reason why this polluted surface water and sewage which thus finds its way to the strata penetrated by the well, may not follow the pervious strata in the subsoil and limestone, and in this way contaminate underground water for a considerable distance around. Other wells are known to exist which are performing the same function, and instead of flowing water or gas, are pipes down which surface water is being poured.

It is probable that these improperly plugged and unprotected wells are the cause of the unsanitary quality of the water in the wells of the National Soldiers' Home. If the pollution of these abandoned wells is to

be continued, the character of other deep wells now furnishing a satisfactory water supply is liable to be injured both by salt water and by sewage pollution.

CONCLUSIONS.

1. The wells located in "The Garden" are contaminated by salt water and sewage.
2. The pollution does not originate in the Mississinewa river.
3. The presence of a fault in the limestone formation cuts off the possibility of pollution originating in Jonesboro or Gas City.
4. The presence of abandoned gas wells into which surface water and sewage drains within a short distance of the Home, indicates a possible source of pollution.
5. The fact that the source of pollution cannot be definitely determined, and that the water in the strata tapped is very salt, very hard and unsatisfactory both for drinking and mechanical purposes, renders the new wells valueless.

There is no reason why shallow wells sunk in gravel in unpolluted localities should not furnish a satisfactory supply for the institution.

In view of our study of the situation, we respectfully suggest that the new wells be abandoned and that an additional source of water be sought in shallow wells located in gravel which is not affected by the inflow of salt water or sewage from either the Mississinewa River or abandoned gas wells.

Yours truly,

H. E. BARNARD,
Chemist to the State Board of Health.

WATER ANALYSIS.

(Parts in 100,000.)

Lab. No.	Date of Collection.	Odor.	Color.	Turbidity	Sedi- ment.	Ammonia.		Nitrogen, as		Chlo- rine.	Solids.		Hard- ness.	Iron.	Remarks.
						Free.	Albu- minoid.	Ni- trates.	Ni- trates.		Total.	Fixed.			
2426	Nov. 2, 1908	Slight...	28.0	None...	Slight.	.0048	.0076	.0009	.0001	64.00	166.0	133.0	33.4	.010	Gas formers.
2427	Nov. 2, 1908	Slight...	28.0	None...	Slight.	.0118	.0088	.0100	.0001	65.00	168.4	133.2	33.4	.010	E. Coll present.
2428	Nov. 2, 1908	Slight...	28.0	None...	Slight.	.0114	.0084	.0000	.0001	64.00	166.0	132.8	33.4	.010	Gas formers.
2429	Nov. 2, 1908	Slight...	28.0	None...	Slight.	.0116	.0092	.0050	.0001	64.00	168.0	131.0	33.4	.010	E. Coll present.
2430	Nov. 2, 1908	Slight...	28.0	None...	Slight.	.0098	.0084	.0009	.0001	64.00	161.0	135.0	33.4	.010	Gas formers.
2431	Jan. 1, 1909	None...	60.0	V. much.	Slight.	.0040	.0085	.0000	.0000	1.80	46.0	37.2	31.2	.150	E. Coll absent.
2432	Jan. 1, 1909	None...	40.0	V. much.	Slight.	.0240	.0090	.1500	.0040	2.40	60.6	46.4	32.6	.250	E. Coll present.
2433	Jan. 1, 1909	None...	50.0	Much.	Slight.	.0035	.0035	.0050	.0001	1.70	42.4	35.6	31.6	.085	E. Coll absent.
2434	Jan. 1, 1909	None...	9.0	V. Sl.	V. Sl.	.0035	.0090	.1000	.0006	1.50	57.4	44.6	34.0	.070	E. Coll present.
2435	Jan. 25, 1909	Sl. earthy	9.0	V. much.	Much.	.0035	.0100	.1000	.0000	19.50	70.0	55.4	33.8	.260	E. Coll absent.
2436	Jan. 26, 1909	None...	20.0	Slight...	None.	.0045	.0090	.0050	.0000	10.50	66.0	53.4	35.2	.140	E. Coll absent.
2437	Jan. 26, 1909	None...	4.0	Slight...	None.	.0045	.0090	.0050	.0002	10.50	66.0	53.4	35.2	.070	E. Coll absent.
2438	Jan. 26, 1909	None...	9.0	Much...	V. Sl.	.0050	.0110	.0400	.0000	6.40	37.8	28.4	15.0	.200	E. Coll absent.

THE DISPOSAL OF SEWAGE OF THE BUILDINGS AND DORMITORY
OF MEROM COLLEGE, MEROM, IND.

The State Board of Health received on May 3, 1909, a communication from J. J. Parker, M. D., health officer at Merom, Indiana, requesting advice as to the disposal of the sewage from the college buildings and dormitory in a way satisfactory to the State Board of Health and in conformity with the requirements of the stream pollution law. In response to this request, on May 12, 1909, the Board caused an investigation to be made of the college and its surroundings by J. H. Brewster, of the State Laboratory of Hygiene.

The results of the investigation show that Merom has no public water supply and that the water for domestic use is obtained entirely from private wells. There is no sanitary sewer system and outhouses are used exclusively. In order that the college may be provided with a sanitary system of plumbing and sewerage there has been installed a private system in which the water is taken from wells, and by means of pressure tanks supplied to all parts of the college buildings. About three years ago a system of plumbing was installed to afford toilet and bath privileges at a cost of about \$6,000, but owing to poor workmanship it soon became a nuisance, and to the unsanitary conditions caused by it was attributed some sickness among the students. In order to abate this nuisance the entire system was condemned and has been replaced by a proper system of good plumbing, but until a suitable system of disposing of the sewage has been installed the outside privy vaults will continue to be used.

The college is located on one of the higher portions of the town, one-half mile from the Wabash river, and on account of its location there is a natural drainage in almost every direction which will permit the installation of any disposal system that is desired. The problem of obtaining a satisfactory system is simply one of determining the most economical way the sewage can be properly cared for. It was proposed that a sewer be run into a creek which has its origin but a short distance from the college and empties into the Wabash river. Such a plan would be contrary to the stream pollution law. Another suggestion is to build a sewer to the Wabash river and to allow the untreated wastes to run direct into the river.

While the pollution of the Wabash river at this point is not unlawful at the present time, since it forms a boundary between the states of Indiana and Illinois, this system of disposing of sewage is to be avoided if possible, as the state of Illinois may in the near future pass a stream pollution law similar to that of the state of Indiana, and in such event the Wabash river could no longer be used as a sewer.

From information gathered at the time of the investigation, the estimated cost of running a sewer from the college to the Wabash river would be between six and seven hundred dollars. If a system of sewage disposal by means of a septic tank and filtration beds was installed, from which the effluent could legally be run into the near creeks, the problem would be solved for all time to come. The college has an average of about one hundred students, and it is estimated that a septic tank of 2,000 gallons capacity would be of adequate size to treat the sewage from the school

buildings. The cost of such a septic tank would not exceed \$200. The cost of filter beds to handle this amount of sewage ought not exceed \$300. If to this amount \$200 is added for other expenses, the entire cost for the installation of the system would be but \$700. Inasmuch as the cost of installing a sewage disposal system which would take care of the sewage in a sanitary way would not exceed the cost of running a sewer to the Wabash river, it is suggested that this method be adopted.

REPORT OF AN INVESTIGATION OF THE WATER SUPPLY OF MONTPELIER, INDIANA.

MAY 6, 1909.

Dr. C. B. Mulvey, Secretary Board of Health, Montpelier, Indiana :

Dear Doctor—On the 24th of March, I received through you, a request from the City Council of Montpelier to make an inspection of the water supply of that city. In accordance with that request, on March 30th I visited Montpelier and made the necessary survey.

It appeared from an examination of the water supply that it is derived from three wells which deliver water to a large reservoir, from which it is pumped through the mains. One of the wells is an abandoned gas well 1,100 feet in depth, which has, however, been plugged at a point 300 feet below the surface. The other two wells are 250 feet in depth. The reservoir, built in 1906, is a circular well approximately 50 feet in diameter and 50 feet deep, holding approximately 750,000 gallons, according to information received from the engineer. The foundation of the well is excavated in a coarse-grained limestone and is built with tapering sides, so that the bottom area of the reservoir is less than at the top of the limestone. Above the limestone the walls for some 15 feet are made of plank spiked together, the planks being laid flatwise, one upon the other. The upper portion of the reservoir is built of brick for some 20 feet. In the bottom of the reservoir are several wells, which, for a time, supplied all the water required by the city, but after several years' use they failed to furnish a sufficient amount of water, and connection was made with the gas well above referred to, and also to two new wells, all of which are located within a radius of a few hundred feet from the reservoir. The condenser water used in cooling the cylinders of the engines in the pumping station is returned to the well.

The Salamonie river flows by the pumping station, being approximately 200 feet away. A small creek enters the river just below the pumping station, forming with the river a V-shaped area upon which it is located and in which the wells are driven. The river drains the oil fields of Jay county and is sometimes covered with oil. No sewage enters the river directly. Pennville, ten miles above Montpelier, is the largest town and is as yet not supplied with sewers.

At the time of my inspection the reservoir was being emptied and it contained but a few feet of water. The entire brick wall and plank wall and a portion of the limestone sides of the reservoir were exposed. Considerable water was running into the reservoir through faults in the limestone. Water was also seeping in through the plank siding. It is evident from the conditions thus observed that the reservoir is by no means a

tight basin and receives considerable water from other sources than from the wells. A large amount of mud and sediment was collected in the bottom of the reservoir, which, according to the statement of the engineer, had not been cleaned out, to his knowledge, since it was built in 1896. The turbid and muddy appearance of the water, which has caused much of the comment concerning the character of the supply, is due undoubtedly to the infiltration of water from the Salamonie river, which carried with it the fine silt and sediment always present in the water at times of flood.

On the 15th of April, gallon samples of water were collected from the three wells, from the river, from the reservoir, from a pipe running into the storage well into the reservoir, and from a city tap. An analysis of these samples shows a very decided difference in the character of the water from the different sources. The water from well No. 1, the gas well, is low in chlorine and is entirely free from nitrates and nitrites and is in every way a satisfactory water, except that it contains a large quantity of iron. Well No. 3, one of the 250 feet wells, also furnished a satisfactory water, but the iron is even higher than in the first well. The water from well No. 2 is entirely different from that obtained from the other wells. It is high in chlorine, relatively low in hardness, high in iron and has a decidedly oily odor. Two samples of water were collected from the river. Aside from the solid content, they are quite similar. There is, however, a very great discrepancy in the amount of solids present, a condition which I do not understand. B. Coll were present in sample No. 1 from the river, and sample No. 2 also showed some evidence of containing sewage. The sample taken from the pipe running into the storage well seemed to be intermediate in composition between the water from wells 1 and 2. The chlorine content was about one-half as high as in the sample from No. 2. The hardness was also that of a mixed sample. The iron content was very much lower. Sample 2, taken from the reservoir after the river had fallen to its normal flow, was very similar in composition to the sample taken from the pipe above referred to, in all its chemical features. The samples taken from the city tap on the same day were somewhat different in composition, being lower in chlorine, nitrates and hardness and higher in iron and solid contents. None of the samples except those taken from the river showed the presence of bacteria of the gas-producing type.

It is evident from the analyses, first, that the water being supplied the reservoir is obtained from entirely different veins; second, that it contains an excessive amount of iron which is, however, precipitated in the reservoir, so that the water delivered the consumer contains much less than is present in the water which flows into the well; third, that the reservoir is by no means water-tight, but is simply a well into which water from the entire surrounding drainage area may flow, including water from the Salamonie river; fourth, that during periods of flood the river water flows directly into the reservoir in an unfiltered condition, carrying with it large quantities of silt and mud.

The fact that the river water examined contained B. Coll, evidently derived from fecal contamination, makes it imperative that the influx of water from the river be prevented, if the wholesomeness of the water is to be assured. The sediment, which is largely a finely-divided clay held

in suspension in the water, is not of itself injurious, although its presence renders the water unsatisfactory from an aesthetic standpoint. I see no way by which the inflow of water from the river to the reservoir can be prevented except by rebuilding the reservoir.

The supply must be considered unsatisfactory, first, because it is in part derived from unfiltered water containing injurious bacteria; second, because it is at times very muddy and turbid; third, because it contains an excess of iron. It is difficult to suggest means by which the existing condition may be remedied. If a series of bacteriological analyses shows the river water to be for the most part of the year free from sewage contamination and all injurious bacteria, the reservoir might be utilized as a storage basin and water pumped from it only when it was free from turbidity and sediment, at other times pumping directly from wells Nos. 1 and 3 to the mains. Unfortunately, however, water pumped to the mains from the wells before it comes in contact with the air, and thus is deprived of its iron content by oxidation and sedimentation, contains too large a quantity of iron for ordinary domestic use.

Respectfully submitted,

H. E. BARNARD,
Chemist, State Board of Health.

A SANITARY SURVEY OF THE WATER SUPPLY OF SALEM, IND.

OCTOBER 10, 1908.

E. F. Routh, Secretary Town Board, Salem, Ind.:

Dear Sir—In response to your request for the assistance of the State Board of Health, on the 5th of October, Mr. J. H. Brewster, of the State Laboratory of Hygiene, visited Salem, and made a sanitary survey of the conditions surrounding your water supply. The report of his investigations, together with his recommendations for augmenting the present supply, are herewith appended:

On October 5th I visited Salem, Ind., for the purpose of making a sanitary survey of the watershed, relative to a solution of the problem now under discussion by the citizens of that town.

The town of Salem is located on rolling land, composed principally of clay, with an underlying stratum of limestone. There are two creeks running north and south through the town, one on the east side and the other on the west side. These creeks join at the southern end of the town to form one large creek. They are fed principally by storm water, although some of the surrounding springs drain into them. They form the entire drainage system of the town, receiving all the trade waste and all the sewage that is not put into dry vaults, which in the absence of a sewage system are used extensively. The new school building has a large vault, which will be emptied during flood times into the creek.

The present water supply is taken from the Morris springs, and runs by gravity into an open concrete well, from which it is pumped to an open stone reservoir located on a hill in the west side of town, and constitutes their entire storage capacity. From here the water is distributed through the mains by gravity to all parts of the town. There are no

wells, and for this reason the entire population, approximating 3,000 people, are entirely dependent upon the springs supply of water for drinking, domestic and manufacturing purposes. As the present supply is not adequate during droughts, some way of providing more water is necessary.

There are two solutions before the town board for their consideration. One is to build an open storage reservoir that will hold three or four months' supply. It will be so constructed and baffled that all the water will be continually in motion. This reservoir will be filled in the spring of the year with water to be used during the summer months when the inflow is not as large as the outflow. The water available for storage is the present spring supply.

The other solution is to go to one of several springs, namely, Indian spring, which is the preferable supply and has been purchased by the city; Hobbs springs, two in number, and Clark spring. This water is to be used to increase the present supply from Morris spring. Bayne spring has also been suggested as an additional supply to Morris spring. Indian spring comes from the mouth of a cave which can be entered for over one-fourth of a mile. The roof and sides of the cave are rock, while the bottom is gravel. The spring is located in a lightly-wooded, rolling section of the country, with but one or two small farm houses within a mile of the spring. Because of the natural roll of the ground there are some low spots or sinks where surface water collects. It is claimed that these pools seep through and enter the spring supply. There is a large pond some distance away and in quite the opposite direction from the apparent direction of the head water of the spring, which it is claimed seeps through the ground and enters the spring. There is no proof at hand to show that these conditions exist, and as simple experiments could be made which would show conclusively whether or not there is any connection between these points, it should not be taken for granted. Inasmuch as the same conditions exist at all the springs, what might be true in one case is liable to be true in another. Other than this one point the sanitary surroundings of Indian spring seem to be perfectly satisfactory.

The Hobbs springs are located by the side of the road leading to and within a few hundred feet of the Hobbs house, at the bottom of a hill. On top of the hill and directly over the springs originally stood a house. A barn and well still remain in use at this place. There is also a large sink-hole here. The origin of these springs are unknown, and while the conditions above noted may not affect the water, yet the surroundings for a public water supply are not as satisfactory as that of Indian spring.

The Clark spring is located in the bottom of a small valley, close to the roadside. It can easily receive the surface flow from the farm on the top of the hill. The ground surrounding the spring is swampy. There is nothing known of the origin of the spring, but the general surroundings are not as satisfactory as at the Indian or Hobbs springs.

The Baynes spring is located at the foot of a hill, on which is a farm house and barns. The mouth of the spring is on land that is used for a hog yard. A tunnel or sink-hole outlet runs under the hill and empties into the spring. This tunnel receives practically all the storm flow of the surrounding country. It has been stated that this could be closed up, thus

preventing the surface water from entering the spring. While it is true that the surface water could be kept out by closing up this tunnel, providing there is no other means of seepage, yet it is nevertheless true that all other sinks could be treated in the same manner. Considering the surroundings of all the springs, with the exception of Clark spring, Bayne spring is the most unsatisfactory from a sanitary standpoint.

The analyses of samples of water taken from these springs on October 7th, by H. C. Hobbs, show all the water to be satisfactory at the present time. Inasmuch as this is an exceptionally dry period and there is no surface water running, it will be necessary to have samples taken from these points during flood seasons before we can be positive that the waters are entirely satisfactory.

As a solution of the problem of an increased water supply it may be stated that either a storage reservoir which is properly constructed, or the addition of either Indian spring or Hobbs springs to the present supply (the preference given to Indian spring), will be as satisfactory as is possible from any running water supply, providing the waters during all periods of the year are in the same condition that they are at present.

Any town or city that is about to install a new water system should look at the future quality as well as the quantity of water, inasmuch as it will be but a short time when the state laws will require that the public shall have a safe and wholesome water, and also a sanitary sewage system. That the present water supply has been satisfactory and typhoid fever practically unknown is a point to be considered, and if it can be proven that a sufficient amount can be obtained from the present springs, they should be continued as the source of supply, inasmuch as it is not known at present what the quality of the water from the other springs will be during seasons of heavy rainfall.

If a storage reservoir be constructed it should be covered, otherwise should not be used. It should be properly baffled, so as to keep all the water in motion at all times. With a storage reservoir installed, if it is found that at any time in the future the water is not suitable for drinking and domestic purposes, a filter plant can be constructed at a much less cost, inasmuch as there will be already installed the storage reservoir and an excellent settling basin, both of which are necessary. If a filter plant is built storm water can be used as a source of supply. On the contrary, if an added spring is furnishing a suitable water and the present supply becomes foul, unless the new spring supplies enough water so that the present supply may be abandoned, the whole system will be made foul. If it is found that a storage reservoir constructed as above stated cannot be built as cheaply as water can be obtained from Indian spring, from all present knowledge of the quality of water this spring may be used.

The receiving well at the pumping station and the present storage reservoir, which still contains algæ growths, should be cleaned and covered if a satisfactory supply is to be maintained.

We shall be very glad to make a further study of your water supply if at any time you may desire assistance.

Yours very truly,

H. E. BARNARD,
Chemist, State Board of Health.

REPORT OF THE FILTRATION PLANT AT SEYMOUR, INDIANA.

J. H. BREWSTER.

The pumping station and the filtration plant of the Seymour Water Works Company is located on White river, about two miles north of the city of Seymour.

The pumping station is housed in a brick building, and includes both the boiler room and the pump house. The boiler room is equipped with two 80-horsepower and one 120-horsepower Atlas boilers. The pump house is equipped with two compound double expansion Smith high duty pumps of 1,000,000 gallons daily capacity each. These pumps are used for supplying a standpipe of 150,000 gallons capacity with water, and maintain a pressure of 55 pounds, and are also used in furnishing direct pressure for fire protection at 110 pounds. When direct pressure is given, it is necessary to cut off the standpipe, and this is done by means of an electric cut-off that operates the standpipe valve. The station also contains one McGowan duplex low service pump of 1,728,000 gallons daily capacity, that is used to supply the settling basins with river water.

The solution tanks for mixing the coagulant are in the pump house, and feed the coagulant to the water before it passes through the low service pump. They consist of two wooden cylindrical tubs of 850 gallons capacity each and are used alternately, the one filling while the other is feeding. The outlet valves are so rated that it requires three hours for each tank to deliver its contents, and the strength of the solution is varied to meet the demands of the water.

The water pumped from the river is delivered to an outside settling basin, where the heavy suspended matter has an opportunity to settle, carrying with it about 50 per cent. of the bacteria. This basin is a cylindrical wooden tank 16 feet high and 29 feet in diameter, with a capacity of 79,000 gallons, and is covered with a board roof. The inlet pipe terminates in an upturned elbow that is set at an angle of about 90 degrees from the perpendicular. This arrangement carries the incoming water to the top of the settling basin and forms a current which is clockwise around the sides of the basin. The water is taken from the basin to the filters through a float valve, which receives the water six feet below the surface. The design of this basin is not especially good, as not enough opportunity is given for the settling of the water. Owing to the small surface area, the distance traveled is so short that the current formed has a velocity entirely too great, the effect of which can be plainly shown from the accompanying analyses, which show that but 50 per cent. of the bacteria are removed before the water reaches the filters. A settling basin should be so arranged that at least 75 per cent. of the bacteria will be removed where the bacterial counts average nearly 60,000 bacteria, as they did during the investigation. The settling of the water could be much improved by the installation of baffle walls, so as to reduce the velocity of the water and allow a much longer period for sedimentation.

The filters are in a separate brick building 40 feet square. They are circular wooden tub filters of the New York Continental Jewel type, and are set up in four units of 500,000 gallons daily capacity each, giving the com-

plete plant a capacity of 2,000,000 gallons. The filters are 16 feet in diameter, with a sand area of 193 square feet. The beds contain 4 feet of Red Wing sand, under which is 1½ feet of gravel, to prevent the sand from entering the strainer system. These filters were originally installed and used at St. Louis during the Louisiana Purchase Exposition, but have since that time been used continuously by the Seymour Water Company. They are not equipped with any kind of agitating device, which makes the cleaning of the beds entirely dependent upon the effectiveness of the wash water used. They are not equipped with gauges to show the loss of head caused by the collection of dirt on the filters, and for this reason the periods for washing the filters can only be determined by the experience and good judgment of the operator. The filters are not equipped with rate controllers, which, when set at the maximum capacity for which the beds are designed, will prevent them from delivering a larger quantity of water. For this reason great care must be taken at all times properly to adjust the outlet valve so that the filters will not deliver water in greater amounts than they are capable of filtering, as such operation will result in a very poor effluent and probably allow dirt to pass through the sand beds. The lack of rate controllers is a serious drawback to the efficiency of the plant, for while loss of head gauges and agitating devices are always to be desired, yet a careful operator can keep his plant in perfect operation without them, but he cannot readily tell at all times just how much water is passing through the filters, and for this reason he must use extreme care in setting his outlet valve to keep them properly checked. Aside from these features the general design and construction of the plant is very good.

Under the filters is a concrete reservoir 10 feet deep covering the entire area of the filter house and having a capacity of 120,000 gallons, which receives the water coming from the filters, and from which it is pumped into the standpipe, located about half way between the plant and the city. It is 16 feet in diameter and 100 feet high, with a capacity of 150,000 gallons. For all other uses than fire protection, the water is furnished the city by gravity from the standpipe. The water is sold entirely on flat rates, which gives opportunity for waste from excessive sprinkling and leaks. The company has about 12 miles of main and about 650 services. As the water coming from the city hydrant had at times been muddy and unfit for use, the local board of health appreciated the fact that there must be something at fault with the system of purification, and through its secretary, Dr. J. H. Carter, requested the State Board of Health to make an investigation to ascertain the exact conditions under which the plant was operating, and if possible to advise a remedy for the inferior quality of the water that was at times produced. In accordance with this request, on May 17, 1909, the plant was visited and several points noted in the operation that should be changed. The water passing through the filters at this time was decidedly dirty, and it was also learned upon investigation that the sand beds were extremely dirty and contained a large quantity of mud balls.

It was shown to the water company that a great many changes were necessary and that considerable work would be required to put the plant in proper condition. It was also explained to the company at this time that a filtration plant should be put under laboratory control and the operation conducted according to the results obtained. The company, realizing the fact that this was not only a safeguard to the consumer but a protection to the company, made arrangements for the establishment of such a laboratory as was necessary to carry on this work. Preparations were also made to give the plant a thorough overhauling.

On June 17 the work was commenced. The establishment of the laboratory for making bacterial counts and the presumptive test for B. Coll was started, and instructions for carrying on this work given to the superintendent, W. F. Peter.

Because of the impossibility of obtaining the proper quality as well as quantity of water desired before the mud balls were removed from the bed, this work was the first to be taken up. These mud balls, which were found to be composed entirely of clay, are caused by inefficient washing of the filter beds. In not removing the silt that is carried in suspension in the water, the principal constituent of which is very finely divided particles of clay, it collects in very small balls. These balls are heavier than the rest of the dirt and are not removed with the same amount of wash water that is required for the ordinary washing, but remain in the sand beds and at each washing collect more of the clay. In this way they increase in size unless they are removed by mechanical screening. After they have accumulated to a size greater than that of the sand grains, it is impossible to wash them out through the ordinary process of washing the filters without losing the sand at the same time. These clay balls were removed by placing planks across the tops of the filters so that men could reach any part of the sand, and the wash water was started for a regular washing of the sand. During this time, when the whole sand bed was in suspension, two men with screens that were 2 feet square and of $\frac{1}{4}$ -inch mesh removed the clay. As the entire sand beds were very dirty and foul, the washing and screening was continued for about three-quarters of an hour at a time twice each day for a period of five days. At this time practically all the loose dirt had been removed as well as a large percentage of the clay balls, and on account of the improved condition the beds, were only screened during the ordinary periods of washing the filters. At the end of the five days' screening, enough clay had been removed from the beds to lower the sand level in each filter $2\frac{1}{4}$ inches, which amounted to 40.3 cubic feet, or a total removal of 161.2 cubic feet from the entire plant.

As water will not percolate through these clay lumps, it can readily be seen that with this amount of clay in the beds, the capacity of the plant is materially reduced. If the plant is then forced to filter as much water as it should filter when the beds were clean, the parts of these beds where water can percolate will of necessity have to pass the water at a rate far greater than it could if producing proper filtration. Aside from the lack of knowledge of how to properly operate the plant, this accumulation of clay balls was the primary cause of the poor quality of water that has been delivered to the city.

Another trouble that arose from the inefficient washing of the beds was the loss of sand in the filter. This was caused by heavy mats of clay and coagulent forming in spots over the surface of the sand to a depth in some places of two and three inches. When the wash water was turned on it would naturally seek the places of least resistance, and in so doing all the water would pass through only a small portion of the bed, leaving the places with a heavy coating undisturbed. While at this time there was only a sufficient quantity of water passing through the filter properly to wash it, yet as it was all passing through these weaker spots the pressure at these places was much greater than it should be, and as a result much sand was raised to such an extent that it was carried into the sewer. Upon investigation it was found that during the last five years since the installation of the plant, each sand bed has been lowered about 6 inches, which amounts to 96.5 cubic feet to each bed, or 386.0 cubic feet to the entire plant. This, together with the loss by the removal of mud balls, amounts to a total loss in each bed of 136.8 cubic feet, or 547.2 cubic feet to the entire plant.

As the level of the sand bed lowers, the pressure of the wash water must increase to produce an equally efficient washing, but this cannot be done, as the sewer outlet is not of sufficient size to carry any more water than that required to wash the beds when the sand is at the proper level. This point alone, with all other hindrances removed, would cause the beds to become foul, as the pressure and the quantity of wash water that can be used is not sufficient to raise the dirt to a height where it will pass into the sewer. And again, it is not advisable to endeavor to get this increase of wash water, when simply raising the sand beds will produce the same results, for the wash water is an expense, and it is not good judgment to increase the expense when a more economical remedy is at hand.

For these reasons, preparations were immediately made for supplying this sand and the work is being carried on at the present time.

The washing of filters is done by reversing the filtered water through the sand beds in the usual way for mechanical filters. One thousand five hundred gallons of water per minute are passed through the filters with a surface area of 192 square feet, or at a rate of 284,450 gallons per acre per minute. This will undoubtedly be an adequate amount when the sand is raised to within 6 inches of the top of the overflow into the sewer, providing the filters are washed for a sufficient period and in a proper manner, although there is no mechanical agitation. It was noticed that each time a bed was drawn down, numerous small fish and crayfish would lay on top of the sand beds. As the crayfish are especially apt to crawl along the sand bed it is advisable that they be kept out, for they are apt to break the filtering mat and allow the water to pass on with but little purification. This can be done by placing a wire screen over the floating intake in such a way that if necessary it can readily be cleaned.

Considerable time was given to instructing the operators how to operate the plant. No record was kept of the grains per gallon that were being used, and this could not be ascertained, as there was no knowledge of the amount of water that was pumped in twenty-four hours. The recorder was only in use during the daytime and taken off at night. No consideration was taken of the amount of turbidity in the river water, except as

the operator noted the marked change in its appearance caused by heavy rains. Instructions were given for determining the turbidity of the water with a Hazen reciprocal turbidity rod, and a corresponding table was made, indicating the amount of coagulant to be used for the different degrees of turbidity. With this table the coagulant was to be fed in grains per gallon, which made it necessary to calculate the amount of coagulant used into grains, and also to keep a complete record of the amount of water pumped.

It was discovered while this investigation was under way that once during the night run there was no coagulant fed for some time, and the effects of the omission were very noticeable in the large amount of suspended matter going on the filters and the small amount of coagulant in the settling basin. It is very essential that the coagulant be fed properly at all times, and if it is deemed necessary a punch clock should be placed on the solution tanks to indicate when the tanks are filled, and also determine where to place the blame for negligence. Unless the coagulant is properly and systematically fed, a rapid sand process of water filtration is valueless.

The amount of wash water that was used in cleaning the filter was not known. This data is valuable in ascertaining the cost of operation, and for this reason instructions for determining the amount and per cent. of wash water were given. As the present plant has a 2,000,000 capacity, and the consumption is less than 1,000,000 gallons, it was the impression that two filters was all that was necessary to operate at a time, and so two clean filters were kept in reserve. It is well understood that the day consumption is much greater than the night consumption, so that while the total consumption was less than 1,000,000 gallons, yet there are times during the day run when the rate is over 1,000,000 gallons, and for this reason alone the two filters would have to operate over their capacity, and under which condition it is impossible for them to produce a suitable quality of water.

The necessity of not running the filters over their capacity was carefully explained, and attention called to the fact that a filter can in no case do more than it is designed to do.

An example of running the filters over their capacity is found in the accompanying analysis. On June 28, when the filters were running over their capacity, the bacterial counts in the filtered water were much higher and the per cent. of efficiency was much lower than on June 27 and June 29. It is advisable to operate all the filters all the time at a slow rate, for the slower the operation the more effective the filtration.

The fact that *B. Coli* was present in nearly every test made of the filtered water, and especially on June 27 and 29, when there was a very good bacterial reduction, is an indication that the beds were foul. That the beds should be foul is readily explained by the amount of dirt that they contained and from the fact that they had been in this condition for a long time.

A thorough sterilization of these beds with caustic lye and steam is now being given, and as this treatment can be given to only one bed at a time, it will take several days for the complete sterilization of the plant.

An inspection of the clear well and standpipe was made and both were found to be in a very good condition.

It was suggested as a possible cause for dirty water at times that the capacity of the plant was not adequate to filter enough water to meet all demands, thus making it necessary to pump river water direct to the consumer. As the pumps supplying the city with water are only capable of pumping 2,000,000 gallons daily, and as this amount of water can be filtered and the same amount supplied to the filters, there is no reason for ever going to the river for water, unless, through an accident, the low duty pump would have to be shut down for extensive repairs. In such an event there is an ample amount of water in storage to give the water company sufficient time to notify the people that river water is to be used, thus giving them an opportunity to boil the water.

It is also thought by many of the consumers that the only way to remedy the trouble that has been experienced is by connecting the dead ends, and in this way forming a complete circulation of water through the system. We are of the opinion that this idea needs but little consideration, for the reason that fire hydrants have been placed every 300 feet over the whole system, except where the city has not provided for public mains, and private mains have been laid. If the dead ends are properly flushed, as is required by city ordinance, there will be no trouble experienced as long as the water supplied to the mains from the filtration plant is in proper condition. The point is to have the water good when it starts and it will stay good. If these dead ends should be connected it would be but a short time when other extensions would be necessary, and then the system would be in practically the same condition that it is in at the present time.

The cause for muddy water in the past has not been because the system contained dead ends, but because the water was not properly filtered before entering the mains. This is shown conclusively in the analyses of the samples collected on June 24, 25, 26 and 28. While it will take some time for the plant to be put into proper condition, yet the bacterial results of June 27 and 29 show that the proper effluent can be produced, and that after the overhauling has been completed, if the plant is properly operated, a suitable water, both as to quality and quantity, will be supplied at all times.

RESULTS OF BACTERIAL EXAMINATIONS.

Date.	Lab. No.	Source.	Bacteria.	B. Coll.	% Efficiency.	Hours Filters in Use.	Remarks.
June 24, 1909	1	Raw.....	32,500	+			River clear. Coagulant 240 pounds per day. Approximately 1.6 grains per gallon.
	2	Settled.....	13,000	+	60.0		
	3	Filter 2.....	1,000	+	97.0	1½	
	4	Filter 3.....	2,250	+	93.1	3	
	5	Clear well.....	1,350	+	95.8		
	6	City tap.....	400	+			
June 25, 1909	7	Raw.....	80,000	+			River clear. Coagulant 240 pounds per day. App. 2.6 grains per gal.
	8	Settled.....	40,000	+	50.0		
	9	Filter 1.....	7,500	+	90.6	1½	
	10	Filter 4.....	750	+	99.1	4	
	11	Clear well.....	3,550	+	95.6		
	12	City tap.....	58	+			
June 28, 1909	13	Raw.....	65,000	Susp.			River very muddy. Coagulant 330 pounds per day. App. 4.2 grains per gal.
	14	Settled.....	45,000	+	30.0		
	15	Filter 2.....	1,800	+	97.2		
	16	Filter 4.....	4,000	+	93.9		
	17	Clear well.....	3,000	+	95.4		
	18	City tap.....	300	Susp.			
June 27, 1909	19	Raw.....	60,000	+			River very muddy. Coagulant 480 pounds per day. App. 5 grains per gal.
	20	Settled.....	33,000	+	43.8		
	21	Filter 2.....	225	Susp.	99.7	2	
	22	Filter 4.....	200	+	99.7	2	
	23	Clear well.....	300	Susp.	99.5		
	24	City tap.....	130	+			
June 28, 1909	25	Raw.....	60,000	+			River muddy. Filters were running over their capacity. Coagulant 400 pounds per day. App. 4.3 grains per gal.
	26	Settled.....	33,750	Susp.	43.8		
	27	Filter 1.....	1,700	+	97.2		
	28	Filter 3.....	600	+	99.0	2	
	29	Clear well.....	1,100	+	98.1		
	30	City tap.....	450	+			
June 29, 1909	31	Raw.....	35,000	+			River very muddy. Coagulant 400 pounds per day. App. 4.3 grains per gal.
	32	Settled.....	11,000	+	68.5		
	33	Filter 2.....	165	Susp.	99.7	2	
	34	Filter 3.....	150	Susp.	99.8	3	
	35	Clear well.....	200	+	96.6		
	36	City tap.....	350	+			

**REPORT OF THE SECOND INVESTIGATION OF FILTRATION PLANT
OF THE WASHINGTON WATER AND LIGHT CO.,
WASHINGTON, IND.**

Mr. H. E. Barnard, Chemist, State Board of Health:

Dear Sir—In accordance with your instructions, I beg to submit the following report of an investigation made of the filtration plant owned by the Washington Water and Light Company, Washington, Indiana.

A previous report was submitted to you in July, 1908, covering an investigation made of this water works system, at the request of Dr. A. I.

Donaldson, County Health Officer. This report contains a description of the purification plant and pumping station, and also states that because of improper operation, the sand beds were packed and foul and unable to produce a suitable effluent. Recommendations were also made for changes that were necessary for proper operation of the plant.

Since the submission of that report and in compliance with its recommendations, the water company has dismantled the filters and thoroughly cleaned the sand beds, removing large quantities of mud balls and mussel shells that had collected because of the insufficient washing of the beds. During this time, preparations were made for the establishment of a permanent laboratory, by which to govern the operation of the plant and to give the company a knowledge of the quality of water produced and thus enable them always to furnish a satisfactory supply. In endeavoring to obtain a suitable water the company has, each year, since the construction of the plant, experienced a great deal of trouble during the spring freshets when the river is at flood stage and carrying in suspension large quantities of silt and very fine clay that has been deposited in the river bed during the summer and winter months. Analyses of samples of water collected from the city mains on March 5, 1909, showed somewhat unsatisfactory conditions and the presence of gas forming bacteria. This indication that the old trouble was returning was again manifested when on March 11, 1909, the water coming from the mains was exceedingly turbid, with little of the silt removed.

Inasmuch as the water company felt itself unable to cope with the situation, it was again requested by Dr. Donaldson and also by the water company that the State Board of Health make another investigation to determine the true condition of the water supply and at this time also to determine methods for properly operating the plant and to suggest such alterations as might be necessary. It was further desired by the water company that the State Board of Health at this time establish the permanent laboratory and teach the superintendent of the plant the methods for making the necessary chemical and bacteriological tests and the interpretation of the results.

In accordance with these requests, on March 11, 1909, the investigation was started. The laboratory was established at the filtration plant and daily tests were made of both the raw and filtered water, to and including March 22, 1909. While the results at this time were not as satisfactory as was desired, yet with the data at hand it was determined that the difficulties had been overcome and that by carrying out instructions the operators would have no trouble in producing a satisfactory water. In order to determine the cause of the trouble and find the most suitable way to handle the water, it was necessary to determine by experiments the amount of coagulant that should be used, where and how the coagulant should be fed to produce the best results and the time that should be allotted between the periods of washing the filters.

The river water, during periods of flood stage, in which condition it was during this investigation, is somewhat peculiar in character, carrying large quantities of silt and finely divided clay in suspension. The specific gravity of this matter is so low that proper sedimentation is not possible

by the ordinary methods that take care of the water when it does not contain these finely divided particles or when it carries a sediment of a much coarser and heavier nature.

To produce a satisfactory sedimentation it was found that a few changes in the manner of feeding coagulant had to be made. For, although a large quantity of the coagulant was being used, yet it was settling out so rapidly that there was not enough of it reaching the filter beds to form a sufficient mat to produce proper filtration. The coagulant was being fed into the water as it passed through the centrifugal pump which pumps the water from the river into the settling basins. This way of injecting the coagulant into the water is entirely satisfactory, but the intake pipe as it enters the settling basin has its outlet very close to the bottom, and for this reason the coagulant began to settle before it had an opportunity of reaching the surface of the water. Since it was injected so close to the bottom it settled almost entirely within a few feet of the outlet and therefore collected only a small portion of suspended matter, thus giving the filters more work than they were designed to handle. By raising this outlet to the top of the settling basin, the coagulant was brought to the surface of the water, thus causing a much slower sedimentation and consequently the removal of a greater portion of the solid matter before the water reached the filters, in this way reducing the load that they were obliged to carry. It was also very noticeable that with this one change the amount of coagulant that reached the filters was greatly increased, although there was no change in the amount fed. This also made some improvement in the mat that was formed on the sand beds, but the result as yet was not entirely satisfactory. Owing to some peculiar and unexplainable reason, perhaps the composition of some of the suspended matter or the proportions of certain chemical constituents in the water, the coagulant was very coarse and still settling too rapidly, not removing the amount of sediment that it should with the quantity that was being used. After experimenting without good results with different amounts and kinds of coagulant, iron and lime, sulphate of aluminum and ferritin, it was decided to reduce the amount of coagulant that was being fed through the pump and give the water in the settling basin another dose before it reached the filters. This was accomplished by filling a barrel with the already prepared solution and by means of a perforated one-eighth inch brass pipe distributing it evenly through the water as it passed one of the baffle walls. With this change it was found that the coagulant coming from the inlet pipe was much lighter and did not settle as rapidly, but when it did settle, removed most of the silt. As a result, the water that reached the filters was sufficiently clarified and at the same time contained much more of the coagulant than before. After these changes were made, the total coagulant that was being used amounted to five grains to the gallon, a reduction of one-half, as the dosing up to this time had been ten grains per gallon.

Three conditions exist which make it necessary to give particular attention to the formation of a good mat on the sand beds, first, because of the large quantity of finely divided particles of clay in the water, second, because the coagulant that was carried by the water from the settling basin to the filters was considerably broken up, and third, because the beds did not contain a layer of the finer grades of sand. If a good mat was not

formed, the clay, on account of its extreme fineness, would work its way down between the sand grains and as soon as there was a heavy draw on the filters it would be pulled down into the filtered water. This would not only cause a turbid water, but the clay would also take with it a large quantity of bacteria.

The fact that the coagulant was broken up while passing through two "L's" in the line running from the settling basins to the filters is not peculiar to this plant alone, and is not an infrequent occurrence in water purification. That at times it does happen here is a fact to be given careful attention, as this finely divided coagulant will act in the same manner as the clay unless there is a film of coagulant already covering the bed. If such a mat has been started, then the finer particles will be caught and no further trouble experienced. All sand that is used for filtering material contains a small percentage of a fine grade of sand which forms the top layer in the filter beds, as being lighter it does not settle as quickly when the beds have been washed. These small sand grains form a more compact surface on the bed, thus allowing the coagulant to collect more easily than it would if it were composed of coarse sand. Owing to the fact that these filter beds have in the past been washed far too severely, the finer particles of sand have been carried over into the sewer, leaving only the heavier and coarser grades to form the surface layers. This makes a much more porous top than the bed should have and consequently it does not collect the finely divided particles of coagulant. To remedy this trouble it was recommended that a fine grade of filter sand be obtained to replace that which had been lost. But to give immediate relief until such sand could be supplied, a small amount of coagulant was distributed over the filters after each washing of the beds. This was done by means of an ordinary flower sprinkling can, and as the coagulant was much coarser than the coagulant found in the water, a thin film was formed all over the bed which collected the more finely divided coagulant and made a good mat.

The filters are cleaned by reversing filtered water through the sand bed and washing the collected dirt into the sewer. These filters are equipped with an agitating device that forces compressed air through the sand during the progress of washing. With this device the beds are sweetened and the period of washing made much shorter by causing the sand grains to rub together and so separate them more quickly from the dirt. The practice had been to put both the water and air through the filters at the same time until the filters were clean. The sand beds being only fifteen inches from the top of the wash troughs when the beds are compact, as the wash water is turned on and the beds are formed into a practically liquid state, the sand raises so close to the top of the troughs that by forcing air through at the same time the sand blows over and is carried to the sewer. As this system of washing had already given trouble on account of the loss of the fine sand, it was entirely changed and operated in the following manner: The filters were drained of water to the top of the sand. The wash water and air were both turned on until the water reached nearly to the top of the troughs. The water was then turned off and for a few minutes the air alone was used, after which the air was shut off and the wash water used alone until the filters were clean. This did not permit of as quick a washing as was produced by the use of air

and water together, but unless the design of the filters should be materially changed they could not both be used without the loss of sand.

The amount and method of feeding the coagulant and the way of washing the filters having been determined, but one more problem remained to be solved—that of the proper period that should elapse between the washing of the filters. Had the loss of head gauges with which the plant is equipped been in working order, this feature would have been of little moment, but as they were not in working order and could not be repaired until after this investigation was finished, this feature was of considerable importance. The filters are designed to purify a maximum amount of one and one-fourth million gallons of water per day, when the river is in its normal state. But as the water was extremely muddy at this time, the load on the filters was increased and consequently necessitated a more frequent cleaning. This fact not being realized by the local operators, the filters were allowed to remain in use until they had filtered about a million gallons of water. As the dirt accumulated on the top of the beds the down draft or negative head increased until it reached a point where it caused a break in the mat and also in the top layers of the sand which had already given trouble in keeping a compact mat. This break allows the water to pass unfiltered into the clear well and also to take with it some of the previously collected silt, thus causing a muddied condition in the filtered water. The operators, not knowing that the sand bed had been broken, endeavored to relieve the condition by increasing the amount of coagulant used. As the filters were washed several times a day while the experiments for the proper use of the coagulant were being carried on, this misconception on the part of the operators was not learned until the latter part of the investigation when it happened during the night run of March 21st. To this is attributed the high bacterial counts on the following day, which are shown in the accompanying table. Instructions were given to stop a filter immediately upon the discovery of such trouble and to give it a thorough washing, for, when a mat is once broken, it is impossible to patch it up until the whole filter has been relieved of its burden. To relieve this trouble permanently instructions were given to wash the filters every twelve hours until the loss of head gauges could be put into commission. With the amount of water that was being consumed this length of time was sufficient to act as a safeguard against further trouble of this kind.

The time for carrying on this work was limited to such an extent that the experiments, the instructions in the laboratory work, and the obtaining of bacterial results, all had to be done at once, and for this reason conclusions of this investigation are drawn not only from the bacterial results, but also from the success in obtaining proper coagulation and sedimentation. While the bacterial efficiency in nearly every case was very good, yet the bacterial counts in many cases were very high and indicated improper filtration. But on the whole, the results show that the plant will do the work as soon as the changes in operation have been properly adjusted.

The bacterial count of the raw water during the eight days of investigation averaged 42,600 per c. c., the maximum being 75,000 and the minimum 13,000, with the presumptive tests for B. Coll always showing positive

results. The settled water just before going on to the filter had an average bacterial count of 11,000 bacteria, the maximum being 27,000 and the minimum 2,900 bacteria. These results show that an average of 74.2% of the total number of bacteria present were removed in the settling basins. Water from filter No. 1 had an average count of 1,100 bacteria, with a maximum of 3,375 and a minimum of 245, thus giving this bed an efficiency of 90.0% bacterial removal after the water had passed through the settling basins and a removal of 97.49% of the bacteria in the river water.

Water from filter No. 2 showed an average bacterial count of 947 bacteria, the maximum being 2,700 and the minimum 175 bacteria, the efficiency of this filter being 91.4% over the settled water with a total bacterial reduction of 97.8%. These figures show that during the eight days of the investigation the plant as a whole gave an average efficiency of 97.6%.

Only once during this time did the effluent from either filter show a test for B. Coli. This was on March 19th, when the water from filter No. 2 contained 2,700 bacteria and from filter No. 1, 3,376 bacteria. It has already been stated that the bacteriological work was being done at the same time that these experiments were being carried out, and to this is attributed the results of this day which showed an efficiency of only 95.5% and also containing such a large number of bacteria. The bacterial count on water from filter No. 1, on March 17th, was 1,450, while the samples from filter No. 2 showed but 175. The samples were taken from No. 1 filter about 15 minutes after the bed had been washed, and as a new bed does not give as good an efficiency as an old one, this is doubtless the reason for the high bacterial count. On March 22d the samples from both filter No. 1 and filter No. 2 show high count, due no doubt to the reasons given above.

A filtration plant should at all times produce an effluent which is free from pathogenic bacteria, but it must be remembered that the quality of the effluent depends to a great extent, upon the quality of the raw water. For example, while a plant may reduce the bacterial count 99% when the bacteria in the raw water number about 50,000, the effluent will then contain a far greater number of bacteria than will be found if the raw water contains but 5,000 bacteria and a 99% efficiency is still maintained.

It was shown by a series of experiments in June, 1908, that the sewage entering the river from Hawkins Creek directly affects the water received at the pumping station. In order to have as good a quality of water as possible to filter, the mouth of this ditch and the sewage entering the river at this point should be done away with.

The use of laboratory method was readily grasped by the local operators and by the time the investigation was finished, they were able to do all the work necessary to determine the exact working of their plant. By putting the operation of the plant under laboratory control, together with the improvements made in the plant, and the changes in the method of operation, the city of Washington will have a safe and wholesome water for drinking and domestic purposes, a valuable civic asset and which the city should endeavor to protect in every possible way.

J. H. BREWSTER.
Water Chemist.

RESULTS OF BACTERIAL EXAMINATIONS.

Date.	Lab. No.	Source of Sample.	Number of Bacteria.	B. Coll.	% Efficiency.	Filtered Water.	
						Average Effluent.	Average Bacteria.
March 14, 1909	1449A	Raw water	30,000	+			
	1450A	Settled water	4,750	Gas.	87.5	97.3	525
	1451A	Filter No. 1	975	—	96.8		
	1452A	Filter No. 2	675	Gas.	97.8		
March 15, 1909	1453A	Raw water	41,000	+			
	1454A	Settled water	7,500	+	81.7	97.1	1,200
	1455A	Filter No. 1	925	Gas.	97.8		
	1456A	Filter No. 2	1,500	Gas.	95.3		
March 16, 1909	1457A	Raw water	26,000	+			
	1458A	Settled water	2,600	—	90.0		
	1459A	Filter No. 1	245	—	99.1	99.1	237
	1460A	Filter No. 2	230	Gas.	99.1		
March 17, 1909	1461A	Raw water	13,000	+			
	1462A	Settled water	2,800	Gas.	78.5		
	1463A	Filter No. 1	1,450	Gas.	88.9	94.8	512
	1464A	Filter No. 2	175	—	98.7		
March 19, 1909	1465A	Raw water	67,500	+			
	1466A	Settled water	6,500	+	75.5	95.5	3,000
	1467A	Filter No. 1	3,375	—	95.0		
	1468A	Filter No. 2	12,700	+	96.0		
March 20, 1909	1469A	Raw water	74,250	+			
	1470A	Settled water	27,000	+	63.7	99.5	427
	1471A	Filter No. 1	330	—	99.6		
	1472A	Filter No. 2	525	—	99.3		
March 21, 1909	1473A	Raw water	18,750	+			
	1474A	Settled water	4,000	Gas.	78.7	98.5	282
	1475A	Filter No. 1	295	—	98.5		
	1476A	Filter No. 2	270	—	98.6		
March 22, 1910	1477A	Raw water	70,000	+			
	1478A	Settled water	25,000	+	64.3	97.7	1,650
	1479A	Filter No. 1	1,800	—	97.5		
	1480A	Filter No. 2	1,500	—	97.9		

STATISTICAL REPORT

FOR

1909.

(CALENDAR YEAR.)

STATISTICAL REPORT, 1909.

This report is for the calendar year 1909. The populations are based upon the school census multiplied by $3\frac{1}{2}$. This census is taken annually.

In the following tables the causes of death are arranged according to the International Classification, which has been adopted by all of the registration States of the country. This international classification was used by the United States Bureau of the Census in its last statistical compilation of causes of death.

Table 1 is a classification of all deaths, with rates per 100,000 population, classified and arranged according to the international system.

Table 2 is a classification of deaths from all causes by months, ages, color, nationality and conjugal condition.

Table 2A is a recapitulation of the classified deaths by months, ages, color, nationality and conjugal condition.

Table 3 gives deaths from all causes by counties, months, ages, color, nationality and conjugal condition.

Table 4 gives deaths from certain diseases by geographical sections and by counties.

Table 5 gives death rates from certain important causes by counties in geographical sections.

Table 6 gives annual death rates for ten years, 1900 to 1910, with average of cities of 5,000 population and over, compared with rural and state rates.

Table 7 gives deaths according to occupations by months and ages.

Table A gives births by counties, months, color and nationality of parents.

Table B gives births by counties, number of children born to each mother, grouped ages of parents, stillbirths, plurality and illegitimate births.

Table C gives by counties the marriages by months, color and nationality.

Table D gives by counties the marriages by grouped ages.

BIRTHS.

The number of births reported in the State of Indiana during the year 1909 was 54,445, of which number 28,045 were males and 26,400 females. Of the total males, 27,517 were white and 528 colored. Of the total females, 25,887 were white and 513 colored. In the preceding year, 56,713 births reported; males 29,672, females 27,041. This shows a decrease over the preceding year of 2,268 births, and a rate of .09. August had the largest number of births, 4,912, and November the smallest, 4,261.

March had the greatest number of deaths, 3,636, and November the lowest, 2,662. The birth (54,445) rate, 19.8, exceeds the death (36,579) rate, 13.3, per 1,000 of population.

The nationality of parents shows as follows: American-born fathers, 49,566; American-born mothers, 50,624. Foreign-born fathers, 3,841; foreign-born mothers, 3,171. Nationality not reported, fathers 481; mothers 93.

Of the total number of children born to each mother, 15,344 were first, 11,910 second, 8,478 third, 5,914 fourth, 3,954 fifth, 2,849 sixth, 1,908 seventh, 1,327 eighth, 894 ninth, 584 tenth, 326 eleventh, 377 twelfth child and over, and 580 not reported.

As to the ages of parents, 731 fathers and 5,752 mothers were under twenty years of age. In the age period of 50 and 60 there were 1,160 fathers and 4 mothers; age period 60 to 70, 131 fathers, and between 70 and 80 there were 8 fathers.

One thousand five hundred and ninety-eight stillbirths, also reported as deaths. The illegitimate births numbered 991, of which 498 were males and 493 females. The plural births numbered 1,123, of which 596 were males and 527 females.

MARRIAGES.

Total marriages reported, 26,456. This is an increase, compared with the preceding year, of 1,840. December had the greatest number of marriages, 2,795, and May had the smallest number, 1,763.

The general statistics on marriage will be found in Tables C and D.

DEATHS.

The total number of deaths reported in 1909 was 36,579, with a rate of 13.3. In the preceding year, 36,224, with a rate of 13.2. Males, 19,461, females 17,118. White males, 18,842; colored 619; white females, 16,558; colored 560.

American-born, 17,599 males and 15,899 females; foreign-born, 1,862 males and 1,291 females; nationality not reported, 260 males, 107 females. Single males, 9,032, females 6,674; married males 7,394, females 5,832; widowed or divorced males 2,823; females 4,535; conjugal condition not reported, males 212, females, 77.

The number of deaths, with rates, for the years named, appear in the following table:

	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.
Deaths	35,516	36,544	34,069	33,892	37,240	36,502	35,992	36,461	36,224	36,579
Annual rate...	14.1	14.5	13.5	13.4	14.0	13.7	13.5	13.4	13.2	13.3

Of the total number of deaths, 7,839, or 21.4 per cent. of the whole number, occurred in the first year of life. Increase of .2 per cent. over last year.

Two thousand three hundred and sixty-five deaths occurred in the age period of 1 to 5, making a total loss of children under 5 years of age, 10,204, or 27.8 per cent. of the total deaths. Increase of .6 per cent. over last year. This is 18.6 per cent. of the total births reported. Increase of 1.2 per cent. over last year.

In the age period 5 to 20, there were 2,413 deaths, or 6.5 per cent. of the total number; increase .3 per cent. over last year. The total loss under 21 years of age is 12,617, or 34.4 per cent. of total deaths. Increase of .5 per cent. over last year. In the age period 20 to 50, practically the prime of life, there were 7,834 or 21.4 per cent. of total deaths, a decrease of .3 per cent. from last year. There were 420 deaths over 90 years of age, an increase of 28 as compared with last year.

The following table, giving deaths by months, shows March with the greatest number of deaths. November had the lowest number of deaths:

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
2,979	2,950	3,636	3,385	2,959	2,681	3,168	3,325	2,537	3,066	2,662	2,990

January, February, March and April had the most tuberculosis deaths. March had the most pneumonia deaths. July and August were highest in diarrhoeal diseases, and September had the greatest number of typhoid deaths, 144.

PRINCIPAL CAUSES OF DEATH FOR THE LAST TEN YEARS, WITH AVERAGE.

The following table gives the principal causes of death, in their numerical order, for the past ten years, and also the yearly average for each cause, and Chart No. 1 gives a graphic representation of the principal causes for 1909:

PRINCIPAL CAUSES OF DEATH IN INDIANA FOR THE LAST TEN YEARS, WITH AVERAGE.

	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
1 Pulmonary tuberculosis...	3,364	4,189	3,952	3,915	4,436	3,998	3,854	3,888	3,825	3,706	3,910
2 Organic heart disease...	1,759	1,754	1,860	2,108	2,180	2,182	2,208	2,766	3,534	3,428	2,377
3 Pneumonia...	2,744	3,384	2,758	2,634	3,487	3,124	2,890	3,258	2,574	2,752	2,980
4 Accidents...	1,334	1,463	1,391	1,601	1,622	1,795	1,796	1,981	2,081	2,030	1,673
5 Cerebral congestion and hemorrhage...	1,056	1,264	1,272	1,346	1,435	1,351	1,496	1,599	1,695	1,932	1,444
6 Infantile diarrhea...	2,049	1,776	1,779	1,449	1,629	1,700	1,823	1,639	1,635	1,841	1,732
7 Cancer...	1,046	1,113	1,209	1,217	1,259	1,424	1,417	1,513	1,739	1,828	1,376
8 Bright's disease...	1,145	1,066	1,133	1,164	1,296	1,423	1,549	1,644	1,420	1,616	1,345
9 Diseases of infants...	1,361	1,247	1,133	1,318	1,726	1,908	1,766	1,783	1,664	1,464	1,541
10 Other circulatory diseases...	470	574	648	596	665	637	768	837	965	1,008	716
11 Typhoid fever...	1,440	1,198	1,217	1,013	1,013	928	913	933	885	875	1,041
12 Broncho pneumonia...	228	490	417	416	472	535	576	585	676	873	525
13 Stomach diseases...	676	704	641	613	561	678	699	617	687	649	652
14 Bronchitis...	522	562	484	523	571	540	460	431	452	630	517
15 Liver diseases...	530	513	530	527	596	578	591	561	518	599	554
16 Diarrhea and enteritis...	345	462	391	411	427	450	460	605	575	563	468
17 Other forms of tuberculosis...	1,281	493	440	477	542	494	602	634	702	543	620
18 Other digestive diseases...	686	662	605	519	530	498	524	491	487	536	553
19 Influenza...	424	1,049	302	348	434	591	224	666	867	804	640
20 Malformation...	242	180	162	152	172	167	284	266	344	433	240
21 Suicides...	196	254	278	254	283	338	321	361	394	404	307
22 Whooping cough...	287	181	164	148	94	136	157	136	416	378	209
23 Diphtheria and croup...	746	555	424	462	314	366	402	353	315	348	428
24 Other genito-urinary diseases...	274	243	390	437	229	194	228	266	292	318	287
25 Diabetes...	111	204	197	197	226	231	269	252	260	291	226
26 Paralysis...	1,109	986	762	762	935	901	777	691	399	286	760
27 Dysentery...	323	263	277	211	184	218	235	242	245	285	248
28 Acute nephritis...	223	142	150	191	207	189	230	169	234	281	201
29 Appendicitis...	125	137	145	163	164	194	174	205	248	269	182
30 Simple meningitis...	447	553	508	365	538	352	240	384	264	196	384
31 Rheumatism...	265	184	209	220	266	253	274	185	174	183	221
32 Other respiratory diseases...	298	370	352	276	325	285	276	242	195	177	279
33 Measles...	85	161	67	73	212	6	23	213	209	156	120
34 Scarlet fever...	141	149	150	164	192	133	101	91	95	151	136
35 Diseases of female genital organs...	107	85	87	85	91	88	112	123	149	149	107
36 Skin diseases...	261	124	181	129	140	179	170	164	177	147	167
37 Simple peritonitis...	325	354	366	311	375	338	265	222	99	120	277
38 Malaria...	374	197	161	131	116	116	102	81	63	115	147
39 Cerebrospinal meningitis...	391	236	187	341	347	460	481	180	154	110	288
40 Homicides...	27	48	36	62	48	85	93	122	122	109	75
41 Convulsions of infants...	381	406	339	335	348	306	254	221	114	81	278
42 Smallpox...	19	21	75	195	97	35	8	8	10	5	47
Total...	29,208	29,965	27,880	27,909	30,981	30,404	30,092	31,608	31,933	32,259	30,223

PRINCIPAL CAUSES OF DEATH

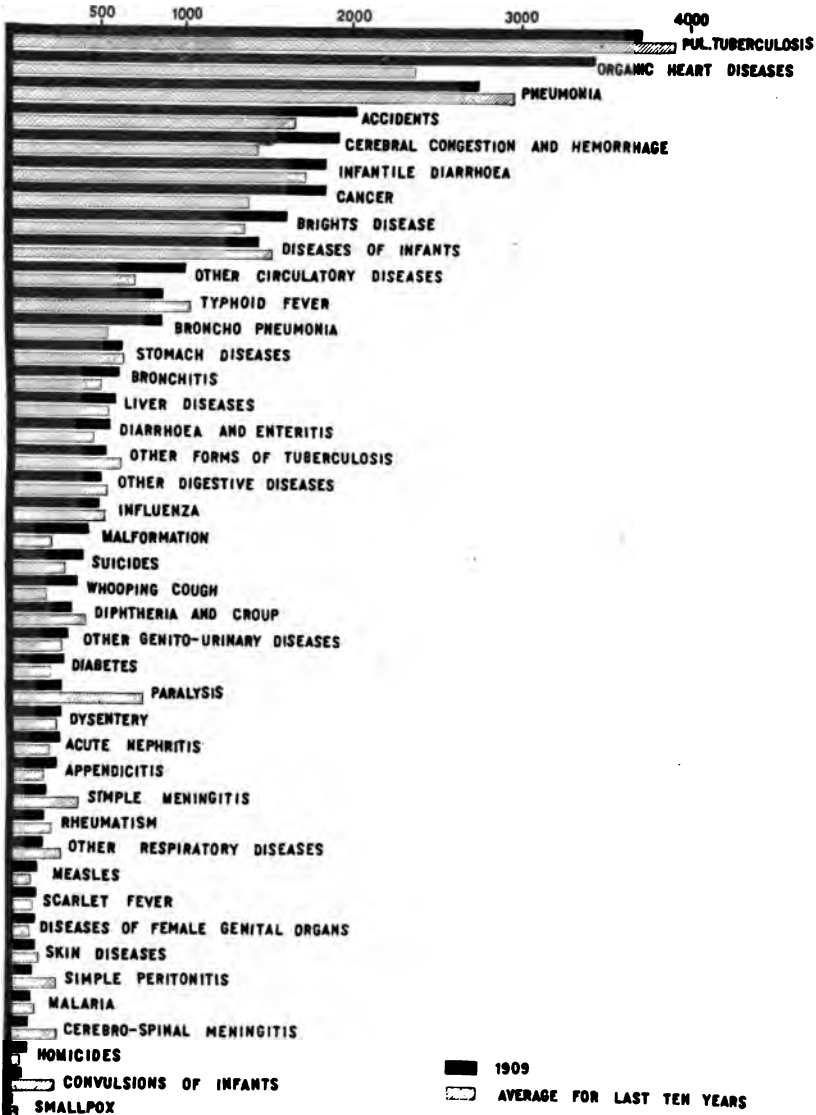


CHART 1

TUBERCULOSIS.

HAVOC WROUGHT BY CONSUMPTION IN INDIANA IN 1904, 1905, 1906, 1907, 1908, 1909.

	1904.	1905.	1906.	1907.	1908.	1909.
Total consumption deaths.....	4,978	4,492	4,456	4,471	4,537	4,479
Male deaths.....	1,807	1,745	1,675	1,964	2,086	2,112
Female deaths.....	3,171	2,793	2,771	2,228	2,442	2,367
Mothers, age 18 to 40, prime of life.....	867	987	917	826	875	1,286
Fathers, age 18 to 40, prime of life.....	490	315	255	343	283	994
Orphans made under 12 years of age.....	2,703	2,694	2,353	2,340	2,407	2,375
Homes invaded.....	3,396	3,307	3,283	3,849	4,022	3,866

TUBERCULOSIS, ALL FORMS.

Deaths by Months, with Average for Last Ten Years.

Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
January.....	417	389	402	368	420	419	415	373	411	389	403
February.....	422	440	389	350	414	407	394	428	425	374	414
March.....	454	433	459	445	550	461	443	449	437	451	458
April.....	455	449	444	411	459	426	439	455	446	449	443
May.....	405	420	405	388	502	391	398	384	412	418	421
June.....	394	348	323	363	400	361	331	356	372	410	375
July.....	382	394	320	373	397	361	329	377	357	349	363
August.....	392	403	331	340	390	355	367	389	314	353	363
September.....	343	309	353	354	347	306	307	340	341	322	332
October.....	366	350	305	306	365	326	344	327	330	327	334
November.....	316	357	320	333	352	326	346	315	344	305	332
December.....	399	370	345	388	582	353	343	329	338	332	377
Totals.....	4,745	4,662	4,396	4,414	5,178	4,492	4,456	4,522	4,537	4,479	4,587

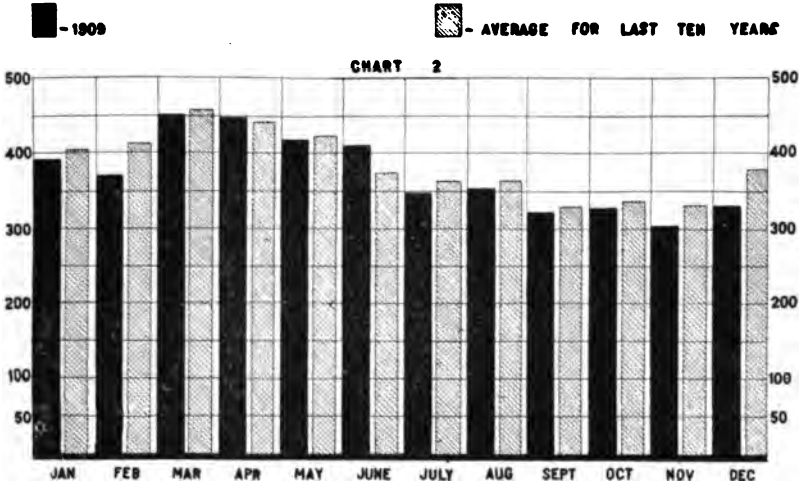
TUBERCULOSIS, ALL FORMS.

Deaths by Ages, with Average for Last Ten Years.

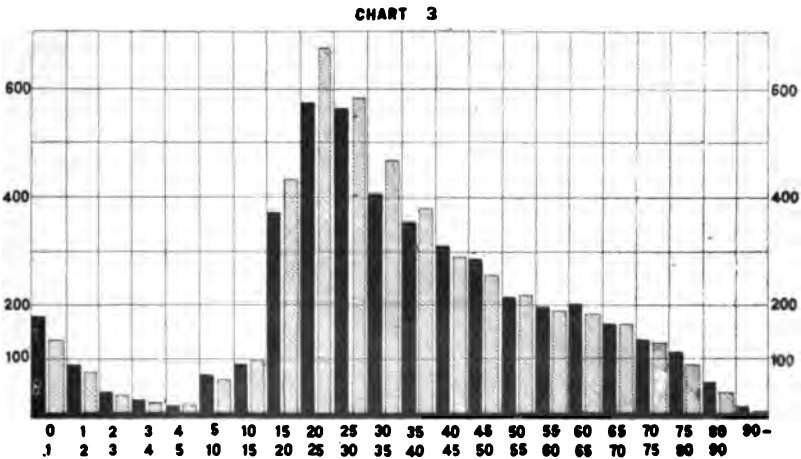
Age.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
Under 1 year.....	155	135	113	109	144	108	126	132	152	179	135
1-2 years.....	74	62	68	59	99	85	62	85	86	87	76
2-3 years.....	42	34	31	24	42	26	38	48	30	36	35
3-4 years.....	23	23	17	23	25	18	31	24	21	24	22
4-5 years.....	12	17	12	14	13	11	24	28	15	15	16
5-10 years.....	69	63	51	64	68	63	64	58	55	67	62
10-15 years.....	90	99	98	92	126	97	106	93	100	93	99
15-20 years.....	532	417	401	436	501	449	411	400	400	373	432
20-25 years.....	690	718	672	707	725	697	681	667	609	575	674
25-30 years.....	627	595	598	572	614	574	577	573	532	567	582
30-35 years.....	457	519	464	491	509	464	464	467	432	410	467
35-40 years.....	388	386	346	374	436	419	375	341	356	355	377
40-45 years.....	346	310	311	267	316	273	242	253	312	312	294
45-50 years.....	269	248	235	225	286	245	280	270	259	290	268
50-55 years.....	218	185	224	217	232	222	231	226	227	217	218
55-60 years.....	209	190	181	193	206	153	171	190	225	198	191
60-65 years.....	185	200	153	166	189	165	170	179	200	203	181
65-70 years.....	159	171	155	143	152	165	162	180	202	165	165
70-75 years.....	124	118	124	116	136	122	122	138	162	135	129
75-80 years.....	78	81	76	74	75	72	96	104	92	152	86
80-90 years.....	36	42	38	30	47	34	35	48	48	56	36
90 years and over.....	2	1	2	3	.....	.....	4	3	5	10	3

TUBERCULOSIS ALL FORMS

BY MONTHS



BY AGES



PULMONARY TUBERCULOSIS.

Deaths by Months, with Average for the Last Ten Years.

Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
January.....	300	368	358	324	379	395	359	330	358	334	350
February.....	300	390	353	318	373	379	349	392	363	310	353
March.....	318	388	416	399	485	421	391	396	380	385	397
April.....	339	408	409	365	409	380	386	392	379	365	383
May.....	266	378	368	359	448	246	337	329	347	347	350
June.....	301	310	297	326	359	330	282	303	318	330	315
July.....	244	349	296	323	358	310	285	314	290	276	304
August.....	271	254	300	293	332	308	312	312	257	294	283
September.....	212	266	296	318	302	263	253	286	278	253	272
October.....	274	302	266	261	322	266	289	276	275	272	280
November.....	248	321	288	297	317	287	302	276	293	253	288
December.....	291	335	306	352	353	313	310	282	287	287	311
Totals.....	3,364	4,069	3,952	3,951	4,426	3,998	3,854	3,888	3,825	3,706	3,900

PULMONARY TUBERCULOSIS.

Deaths by Ages, with Average for Last Ten Years.

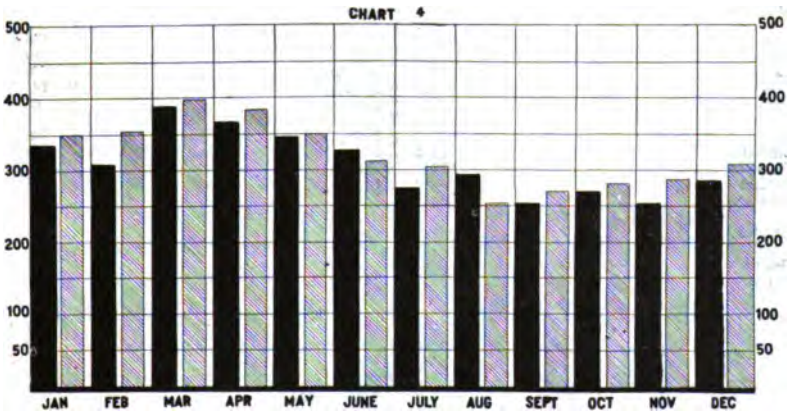
Ages.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
Under 1 year.....	43	76	59	53	72	53	60	63	78	48	60
1-2 years.....	18	35	33	28	48	37	27	31	27	30	30
2-3 years.....	9	14	16	11	23	13	19	19	15	14	15
3-4 years.....	3	12	7	10	14	10	10	6	8	8	8
4-5 years.....	3	7	6	7	9	3	8	10	4	5	6
5-10 years.....	31	28	28	35	32	37	31	29	23	30	30
10-15 years.....	59	84	75	59	101	75	76	66	62	64	71
15-20 years.....	310	383	373	393	457	411	359	356	348	339	373
20-25 years.....	543	676	626	666	687	650	625	623	562	509	616
25-30 years.....	491	559	553	535	582	538	635	517	499	502	531
30-35 years.....	338	490	435	461	486	437	429	430	395	367	426
35-40 years.....	289	356	329	343	412	385	342	318	316	322	341
40-45 years.....	252	287	299	244	271	254	220	234	278	277	261
45-50 years.....	199	223	225	213	262	219	231	238	220	255	228
50-55 years.....	158	174	196	194	209	200	198	197	188	183	189
55-60 years.....	155	166	166	175	186	139	155	165	199	165	167
60-65 years.....	131	182	140	151	175	151	145	153	170	179	157
65-70 years.....	113	148	137	123	137	154	147	163	169	142	143
70-75 years.....	92	105	112	107	121	111	103	126	138	120	113
75-80 years.....	50	73	70	67	65	66	76	88	76	101	73
80-90 years.....	29	37	36	25	39	28	31	43	42	48	35
90 years and over.....	.....	2	1	1	3	.....	4	1	3	8	2

PULMONARY TUBERCULOSIS

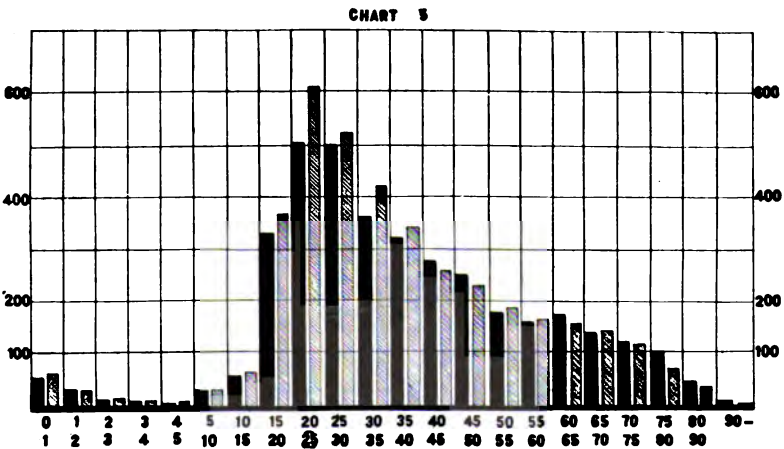
BY MONTHS

■ - 1909

■ - AVERAGE FOR LAST TEN YEARS



BY AGES



CONSUMPTION DEATH RATES PER 100,000 BY COUNTIES FOR 1909, IN INDIANA.

State Rate, 163.9.

COUNTIES.	Tuber- culosis, All Forms.	COUNTIES.	Tuber- culosis, All Forms.
Adams.....	90.3	Lawrence.....	219.8
Allen.....	136.1	Madison.....	163.0
Bartholomew.....	163.6	Marion.....	221.4
Benton.....	121.7	Marshall.....	119.6
Blackford.....	129.4	Martin.....	272.3
Boone.....	155.2	Miami.....	138.7
Brown.....	169.4	Monroe.....	210.7
Carroll.....	148.3	Montgomery.....	206.2
Cass.....	190.1	Morgan.....	191.7
Clark.....	200.9	Newton.....	65.9
Clay.....	121.0	Noble.....	132.5
Clinton.....	167.4	Ohio.....	142.3
Crawford.....	256.1	Orange.....	177.4
Davies.....	160.9	Owen.....	169.1
Dearborn.....	153.5	Parke.....	174.8
Decatur.....	154.2	Perry.....	164.2
Dekalb.....	114.2	Pike.....	224.4
Delaware.....	125.7	Porter.....	81.0
Dubois.....	157.8	Posey.....	178.0
Elkhart.....	138.4	Pulaski.....	66.4
Fayette.....	154.8	Putnam.....	204.6
Floyd.....	212.6	Randolph.....	148.7
Fountain.....	181.5	Ripley.....	190.7
Franklin.....	114.3	Rush.....	147.6
Fulton.....	91.0	Scott.....	133.8
Gibson.....	179.4	Shelby.....	209.0
Grant.....	143.2	Spencer.....	147.8
Greene.....	163.8	Starke.....	104.8
Hamilton.....	164.3	Steuben.....	112.2
Hancock.....	208.2	St. Joseph.....	156.1
Harrison.....	245.8	Sullivan.....	109.4
Hendricks.....	244.5	Switzerland.....	249.7
Henry.....	173.9	Tippecanoe.....	166.9
Howard.....	167.5	Tipton.....	142.7
Huntington.....	133.9	Union.....	224.5
Jackson.....	200.9	Vanderburgh.....	175.5
Jasper.....	89.8	Vermillion.....	112.7
Jay.....	143.6	Vigo.....	206.1
Jefferson.....	136.5	Wabash.....	118.8
Jennings.....	124.3	Warren.....	182.6
Johnson.....	136.8	Warrick.....	151.1
Knox.....	104.6	Washington.....	146.7
Kosciusko.....	113.8	Wayne.....	194.1
Lagrange.....	129.4	Wells.....	132.0
Lake.....	126.0	White.....	102.7
Laporte.....	135.6	Whitley.....	141.8

MONTHLY ANALYSIS OF TUBERCULOSIS DEATHS.

January, 1909.—Total number of tuberculosis deaths, all forms, 352. Pulmonary form, 301. Of the total number, 28 were males in the age period of 18 to 40, and left 56 orphans. The female deaths in the same age period as above numbered 60, and they left 120 orphans. Total fathers and mothers lost in the age period of 18 to 40 were 88. Total number of orphans made, 176. Number of

homes invaded, 316. One of the tuberculosis deaths was a person over 80 years of age.

February, 1909.—Total tuberculosis deaths, 358; pulmonary form, 290. Of the total number 185 were males and 173 females. Of the males, 26 were married in the age period of 18-40, and left 52 orphans under 12 years of age. Of the females, 61 were married in the same age period as above, and left 122 orphans under 12. Total number of orphans, 174. Total number of fathers and mothers lost, 87. Number of homes invaded, 331. Four of the tuberculosis deaths were of persons over 80 years of age.

March, 1909.—Total tuberculosis deaths, 410; pulmonary form, 339. Of the total number, 196 were males and 214 females. Of the males, 36 were married in the age period of 18 to 40 and left 72 orphans under 12 years of age. Of the females, 71 were married and in the same age period, and left 142 orphans. Total number of orphans 214. Number of homes invaded, 391. Four of the tuberculosis deaths were of persons over 80 years of age.

April, 1909.—Total tuberculosis deaths, 427; pulmonary form, 350. In the corresponding month last year, 411 deaths, of which 346 were of the pulmonary form. Of the total number, 114 were males, and 313 females. Of the males, 33 were married in the age period 18 to 40 and left 66 orphans. Of the females, 75 were married in the same age period as above and left 150 orphans. Total number of orphans made in one month by this preventable disease, 216. Number of homes invaded, 296. How many of the 216 orphans will be taken care of by the State could not be told, but certainly some of them. As usual the majority of deaths occurred in the age period of 15 to 50, but it is remarkable that 52 deaths occurred in the age period of 50 to 60; 31 in the age period of 70 to 80; and 7 deaths in the age period of 80 to 90.

May, 1909.—Total tuberculosis deaths, 384; pulmonary form, 328. In the same month last year, 389 deaths, pulmonary form, 330; males, 179; females, 205. Of the male deaths, 28 were married in the age period of 18 to 40 and left 56 orphans under 12 years of age. Of the females, 67 were married in the same age period, and left 134 orphans. This disease caused a total of 190 orphans and invaded 372 homes. Had this havoc been caused by railroads, would apathy still reign?

June, 1909.—Total tuberculosis deaths, 389; pulmonary form, 324. In the same month last year, 339, of which 278 were pulmonary. Of the total consumption deaths in June, 200 were males and 189 females, which is almost the first time that consumption has

killed more males than females in any month. Of the total consumption deaths, 29 were fathers in the age period of 18 to 40, and left 58 orphans under 12 years of age. The mothers in the same age period numbered 67 and they left 132 orphans in the same age period. Total number of orphans made by consumption in this month, 192; number of homes invaded, 377. Why apathy reign in the presence of this awful preventable destruction?

July, 1909.—Total tuberculosis deaths, 324; pulmonary form, 258. Total number in the same month last year, 339, of which 278 were pulmonary. Of the total number of consumption deaths in July, 129 were males and 195 females. Of the males, 17 were fathers in the age period of 18 to 40 and left 34 orphans under 12 years of age. The mothers in the same age period numbered 59, and left 118 orphans under 12 years of age. Total number of orphans made by consumption in one month, 152; number of homes invaded, 312.

August, 1909.—Total tuberculosis deaths, 327; pulmonary form, 272. Male deaths, 131; females, 196. Of the males 21 were married in the age period of 18 to 40 and left 47 orphans under 12 years of age. Of the females, 69 were in the same age period as above and they left 137 orphans under 12 years of age. This makes 184 orphans made in one month by the preventable consumption. Number of homes invaded, 297.

September, 1909.—Total number of deaths from all forms, 307, of which 244 were pulmonary. Total deaths in the same month last year, 318, of which 263 were pulmonary. Of the total consumption deaths in September, 142 were males and 165 females. Of the males, 19 were fathers in the age period of 18 to 40, and left 36 orphans under 12 years of age. Of the females 58 were mothers in the same age period and left 116 orphans under 12 years of age. Total number of orphans made by the preventable consumption in one month, 154. Homes invaded, 290.

October, 1909.—Total tuberculosis deaths, 307, of which 153 were males and 154 females. Of the males, 26 were married in the age period of 18 to 40, and left 52 orphans under 12 years of age. Of the females, 45 were married in the same age period as above, and left 90 orphans under 12 years of age. Total number of orphans made in this one month by this preventable disease, 142; number of homes invaded, 293. Of the tuberculosis deaths, 197, or 64 per cent., were in the useful age period of 15 to 50.

November, 1909.—Two hundred and ninety-one deaths, of which 127 were males and 164 females. Of the males 29 were in the age

period of 18 to 40, were married and left 58 orphans under 12 years of age. Of the females 64 were married, were in the same age period as above and left 128 orphans under 12 years of age. Total number of orphans, 186; total number of homes invaded, 287. Of the tuberculosis deaths, 188 were in the age period of 15 to 50, which is 64.6 per cent. of the total.

December, 1909.—Three hundred and five deaths, 267 pulmonary tuberculosis, 38 other forms. Of these 153 were males and 152 females. Of the males 31 were in the age period of 18 to 40 and left 62 orphans under 12 years of age. Of the females 53 were in the same age period as above and left 106 orphans. Total number of orphans made in one month by consumption, 168. Total number of homes invaded, 297.

PNEUMONIA.

DEATHS BY MONTHS, WITH AVERAGE FOR LAST TEN YEARS.

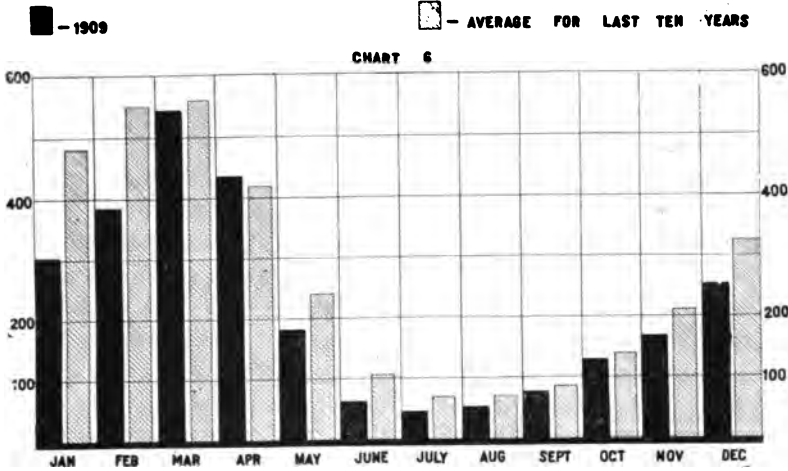
Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
January.....	373	655	473	450	579	601	490	445	425	303	479
February.....	435	673	535	424	750	781	439	646	454	384	533
March.....	616	646	497	419	761	666	541	533	414	546	563
April.....	498	466	371	330	576	260	404	290	277	436	420
May.....	234	280	207	240	336	189	223	276	166	180	243
June.....	94	120	104	129	115	90	119	144	74	64	106
July.....	62	72	70	83	101	82	88	62	45	47	71
August.....	65	74	97	86	69	69	82	68	53	52	71
September.....	56	90	113	114	86	88	98	75	69	75	85
October.....	89	156	169	134	135	148	189	145	103	130	139
November.....	136	202	196	246	251	253	300	218	195	166	216
December.....	223	389	307	389	363	372	410	301	243	263	324
Totals.....	2,883	3,823	3,319	3,044	4,102	3,594	3,892	3,202	2,517	2,638	3,251

DEATHS BY AGES, WITH AVERAGE FOR LAST TEN YEARS.

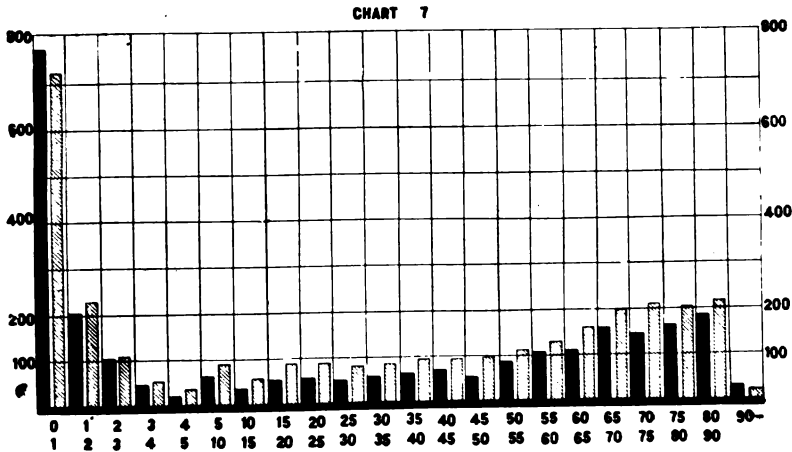
Age.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
Under 1 year.....	542	758	692	703	919	868	714	639	623	768	725
1-2 years.....	206	248	246	216	326	251	262	209	163	206	233
2-3 years.....	113	123	113	107	145	97	127	96	63	103	108
3-4 years.....	53	73	47	57	87	63	67	57	19	41	56
4-5 years.....	40	46	39	34	53	23	46	29	22	18	35
5-10 years.....	82	120	93	102	145	90	91	65	55	65	90
10-15 years.....	64	66	55	57	72	71	50	40	35	24	54
15-20 years.....	95	139	93	88	128	89	95	63	50	52	88
20-25 years.....	95	130	107	83	108	83	77	84	61	53	88
25-30 years.....	92	119	86	72	98	79	89	90	50	49	83
30-35 years.....	91	115	96	58	104	90	86	87	63	60	85
35-40 years.....	104	121	80	78	114	107	104	98	78	66	94
40-45 years.....	89	142	104	77	105	98	106	88	71	68	94
45-50 years.....	107	110	87	103	137	106	112	100	78	57	99
50-55 years.....	116	159	118	89	137	130	130	143	73	85	117
55-60 years.....	107	179	112	132	136	140	137	125	101	108	127
60-65 years.....	181	218	142	164	195	173	155	172	123	113	163
65-70 years.....	162	244	205	172	225	237	216	215	168	163	200
70-75 years.....	163	246	192	202	261	270	229	243	212	147	216
75-80 years.....	162	191	200	192	268	226	232	238	180	166	205
80-90 years.....	195	216	181	204	271	237	232	230	209	183	220
90 years and over.....	25	24	27	42	28	25	33	18	34	25	25

PNEUMONIA DEATHS

BY MONTHS



BY AGES



MONTHLY ANALYSIS OF PNEUMONIA DEATHS.

January, 1909.—The disease existed in every county in the state. No special epidemic reported. Total number of deaths 367. In the corresponding month last year, 462. Of the total number of pneumonia deaths, 135 were over 60 years of age or about 40 per cent.; 136 were under five years of age.

February, 1909.—The disease existed in every county in the state. No special epidemic reported, but unusual prevalence existed in two or three places. Total number of deaths, 423. In the same month last year, 509. By certain ages the pneumonia deaths were: Under 1 year of age, 136; 1-5, 60; 5-15, 16; 15-30, 28; 30-50, 35; 50-60, 29; 60-70, 41; 70-80, 42; 80-90, 29; 90 and over, 7.

March, 1909.—The disease existed in every county in the State, no special epidemic reported. Total number of deaths, 574. In the corresponding month last year, 463. The male deaths numbered 319 and the female 255.

April, 1909.—Total number of deaths, 452. In the corresponding month last year, 332. The male pneumonia deaths numbered 235, and the females, 217. By age periods the deaths were: Under 1 year, 112; 1 to 5, 51; 5 to 20, 23; 20 to 50, 60; 50 to 80, 173; 32 were over 80 years of age.

May, 1909.—Total number of deaths, 203. In the same month last year, 222 deaths. Male pneumonia deaths numbered 105, females 98. By certain age periods the deaths were: Under 1 year, 34; 1 to 5, 26; 5 to 20, 16; 20 to 40, 24; 40 to 60, 31; 60 to 70, 19; 70 to 80, 31; 80 to 90, 19; 90 and over, 3.

June, 1909.—Total number of deaths, 72. In the same month last year, 60 deaths. It stood 18th in area of prevalence, and in the same month last year it stood 21st. The male deaths numbered 46, and the females numbered 26.

July, 1909.—Total number of deaths, 61; 31 males, 30 females. It stood twentieth in area of prevalence, and in the same month last year it stood eighteenth, with 60 deaths. In the preceding month there were 72 deaths and the disease was eighteenth in area of prevalence. The male deaths numbered 35 and the females 25.

August, 1909.—Total number of deaths, 57; 28 males, 29 females. It is unusual for the female deaths from pneumonia to outnumber the male deaths. Pneumonia stood nineteenth in area of prevalence. In the corresponding month last year it stood nineteenth. October will show an increase in pneumonia, because the cold weather will make people shut themselves more closely in their houses.

September, 1909.—Total number of deaths, 86; 45 males, 41 females. It stood fourteenth in area of prevalence, as in the same month last year. In the corresponding month last year the deaths numbered 93. In the preceding month 57, and it stood nineteenth in area of prevalence. The male deaths numbered 28, females 29.

October, 1909.—Total number of deaths, 165; 74 males and 91 females. It is unusual for the female pneumonia deaths to outnumber the males. Pneumonia stood eighth in area of prevalence, while in the preceding month it stood fourteenth. It was predicted last month that October would show an increase in pneumonia, because the cold weather would make the people shut themselves more closely in their houses. Pneumonia, with rare exceptions, follows overeating, over-indulgence and excessive use of foul air. Pneumonia is an expression of ignorance and wrong living. Pneumonia was reported present in every county in the State.

November, 1909.—Total number of deaths, 201; 99 males and 102 females. In the corresponding month last year, 291 deaths. As in the preceding month, there were more female pneumonia deaths than males, and this is unusual. Pneumonia stood eighth in area of prevalence, and held the same position in the preceding month. In the corresponding month last year it was tenth in area of prevalence.

December, 1909.—Total number of deaths, 283; 152 males and 31 females. In the corresponding month last year, 262. From this data it appears there was an increase of pneumonia in December.

TYPHOID FEVER.

DEATHS BY MONTHS, WITH AVERAGE FOR LAST TEN YEARS.

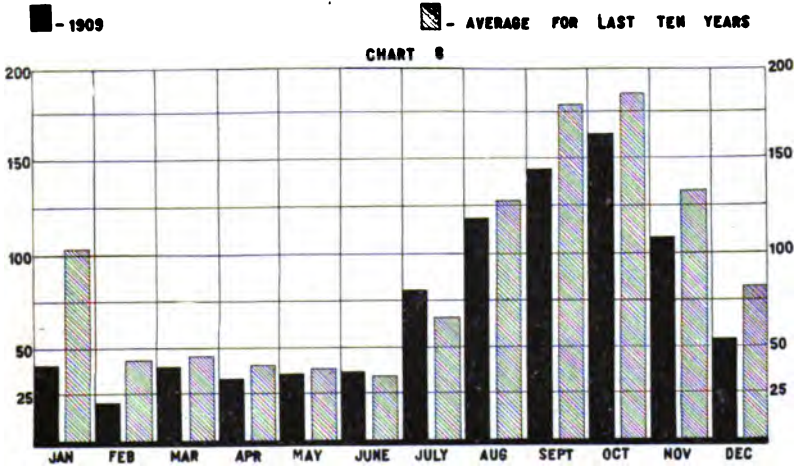
Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
January.....	109	74	66	61	36	511	39	73	50	40	106
February.....	52	50	37	53	55	35	29	57	49	21	43
March.....	40	49	41	55	62	34	40	48	49	38	45
April.....	39	41	45	45	61	26	32	38	38	34	39
May.....	44	35	31	39	55	33	39	42	32	36	38
June.....	27	27	28	42	58	48	29	30	32	37	35
July.....	65	81	88	64	70	57	52	58	63	80	67
August.....	144	148	176	120	107	121	96	145	93	119	126
September.....	245	198	237	193	138	208	155	141	121	144	177
October.....	323	222	225	165	167	154	168	133	150	162	187
November.....	208	195	155	104	137	101	148	84	121	110	135
December.....	144	88	88	72	67	65	86	75	87	54	82
Totals.....	1,440	1,198	1,217	1,013	1,013	928	913	933	885	875	1,041

DEATHS BY AGES, WITH AVERAGE FOR LAST TEN YEARS.

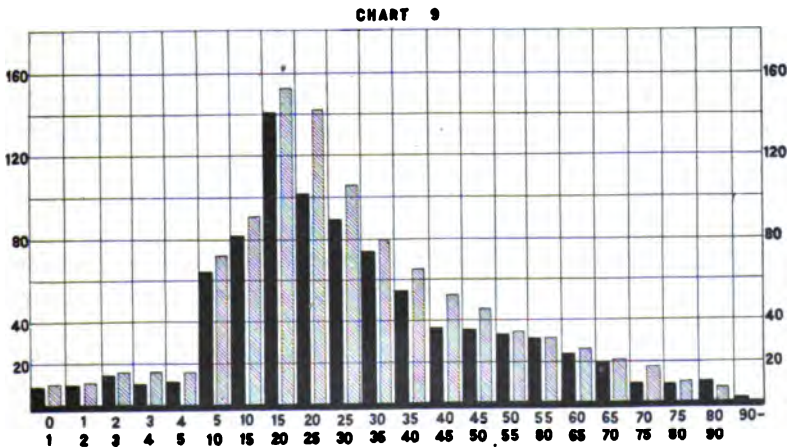
Ages.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
Under 1 year.....	13	18	9	4	16	11	12	8	11	9	10
1-2 years.....	14	14	15	13	11	14	11	7	10	10	11
2-3 years.....	18	12	29	12	18	16	13	13	19	15	16
3-4 years.....	26	18	19	17	8	11	19	13	19	10	16
4-5 years.....	22	19	20	16	16	13	18	10	12	11	16
5-10 years.....	105	91	77	77	74	72	65	58	45	64	73
10-15 years.....	136	87	98	102	82	74	85	92	72	82	91
15-20 years.....	229	178	167	180	133	125	138	145	105	141	153
20-25 years.....	193	177	169	136	137	136	120	126	131	102	142
25-30 years.....	120	146	139	102	89	94	94	94	96	90	106
30-35 years.....	106	78	117	62	73	64	76	79	76	74	80
35-40 years.....	98	70	69	62	73	45	62	67	57	55	65
40-45 years.....	71	75	73	49	47	49	34	46	45	37	52
45-50 years.....	52	49	58	45	49	46	37	41	40	36	45
50-55 years.....	34	34	37	33	45	32	36	32	41	34	35
55-60 years.....	50	36	31	35	37	31	22	24	29	32	32
60-65 years.....	28	33	22	18	42	30	18	28	28	24	27
65-70 years.....	28	25	25	21	22	20	16	16	17	20	21
70-75 years.....	25	24	21	19	18	19	10	17	15	9	17
75-80 years.....	16	5	13	12	10	9	15	10	11	8	10
80-90 years.....	9	8	4	11	7	8	8	5	4	10	7
90 years and over.....				1					1	2	

TYPHOID FEVER DEATHS

BY MONTHS



BY AGES



MONTHLY ANALYSIS FOR TYPHOID FEVER DEATHS.

January, 1909.—One hundred and ninety-four cases in 39 counties, with 36 deaths. In the corresponding month last year, 256 cases reported in 42 counties, with 51 deaths.

February, 1909.—Sixty-eight cases in 30 counties, with 19 deaths. In the same month last year, 194 cases in 39 counties, with 36 deaths. We are aware all cases of typhoid fever are not reported, although all deaths are.

March, 1909.—Sixty-eight cases reported in 30 counties, with 31 deaths. In the same month last year, 245 cases in 40 counties, with 45 deaths. All cases of typhoid fever are not reported, many of them being wrongfully diagnosed as malaria or otherwise.

April, 1909.—Fifty-eight cases reported in 24 counties, with 33 deaths. In the corresponding month last year 198 cases, with 35 deaths in 36 counties. The disease prevailed unusually in the following counties: Clark, 5, and Delaware, 8.

May, 1909.—Eighty cases reported in 22 counties, with 35 deaths. In the same month last year, 91 cases in 26 counties, with 27 deaths. The disease existed unusually in the following counties: Clark, 11 cases; Delaware, 9; St. Joseph, 6; Vanderburgh, 8; Warrick, 5. Not a single case or death was reported from Marion County, the largest in the State.

June, 1909.—One hundred and twenty-five cases were reported in 27 counties, with 34 deaths. In the same month last year 207 cases in 53 counties, with 58 deaths. Typhoid fever was reported epidemic in St. Joseph County—29 cases, with 3 deaths; in Vanderburgh County, 20 cases and 3 deaths; in Porter County, 7 cases, no deaths; Harrison County, 6 cases, 1 death.

July, 1909.—Total deaths, twenty-eight; 267 cases were reported in 60 counties. In the same month last year 207 cases were reported from 53 counties, with 58 deaths. The disease prevailed unusually in the following counties: St. Joseph, 38; Vanderburgh, 33; Washington, 13.

August, 1909.—Four hundred and sixty-four cases reported in 69 counties, with 106 deaths. It is probable the disease existed in every county in the State, but not in severe form. Even Allen County, with a population of 89,579, reported the disease absent, but it almost certainly existed there. The largest number was reported from Marion County, 109, but proportionately this is not as great as in Harrison, from which 23 cases were reported. In the corresponding month last year, 478 cases in 69 counties, with 81 deaths.

September, 1909.—Total deaths, one hundred and thirty-two. There were 757 cases reported from 81 counties. In the same month last year 446 cases in 76 counties, with 118 deaths. In the preceding month, 464 cases reported in 69 counties, with 106 deaths. The disease prevailed unusually in the following counties: Harrison, 62 cases; Marion, 88; Martin, 28.

October, 1909.—Four hundred and seventy-eight cases, with 155 deaths, reported in 75 counties. In the corresponding month last year, 464 cases reported in 72 counties, with 129 deaths. The disease probably existed in every county—if not in severe form, then in mild form. Sometimes it is discouraging to the State Board that the teachings of hygiene and their practical application to the same do not put an end to the scandal known as typhoid fever.

November, 1909.—Three hundred and one cases in 71 counties, with 104 deaths. In the corresponding month last year, 441 cases in 70 counties, with 113 deaths. The disease was epidemic in the following counties: Clark, 10 cases; Grant, 11; Jackson, 13; Marion, 37; Parke, 13; Vanderburgh, 12.

December, 1909.—One hundred and thirty-one cases in 50 counties, with 52 deaths. In the corresponding month last year, 242 cases in 53 counties, with 76 deaths. In the preceding month, 301 cases in 74 counties, with 104 deaths. The disease prevailed unusually in Clark County, 16 cases; Clinton, 8; Marion, 13.

DIPHTHERIA.

DEATHS BY MONTHS, WITH AVERAGE FOR LAST TEN YEARS.

Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
January.....	90	110	49	61	51	32	33	43	42	38	54
February.....	70	61	35	49	35	31	23	41	28	24	39
March.....	68	39	32	27	29	27	26	35	24	18	32
April.....	30	29	27	22	32	13	16	27	12	10	21
May.....	14	23	30	12	22	13	8	20	12	5	15
June.....	13	23	16	16	18	8	12	10	8	3	12
July.....	15	15	7	15	10	16	11	15	11	8	12
August.....	40	24	21	23	12	15	13	20	12	19	18
September.....	64	38	39	35	11	34	36	35	32	26	33
October.....	111	74	48	69	21	82	77	36	43	85	64
November.....	125	56	63	77	35	41	82	37	47	57	62
December.....	105	62	57	56	38	54	65	34	44	15	57
Totals.....	745	554	424	462	314	366	402	353	315	338	428

DEATHS BY AGES, WITH AVERAGE FOR LAST TEN YEARS.

Ages.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Average.
Under 1 year.....	52	60	51	50	28	23	26	20	21	21	35
1-2 years.....	73	58	36	59	47	35	45	34	43	31	46
2-3 years.....	108	65	61	56	33	48	51	35	54	52	56
3-4 years.....	94	80	39	64	46	53	47	51	36	45	55
4-5 years.....	76	53	45	46	22	41	58	30	23	40	43
5-10 years.....	230	143	122	141	99	114	124	127	90	117	130
10-15 years.....	70	51	46	28	26	28	35	32	23	28	36
15-20 years.....	24	23	14	9	5	10	10	7	9	7	11
20-25 years.....	4	7	1	3	1	7	1	8	3	5	4
25-30 years.....	1	3	1	.....	1	3	.....	3	3	0	1
30-35 years.....	2	1	1	2	1	1	.....	1	4	.....	1
35-40 years.....	1	3	.....	.....	1	1	.....	1	3	1	1
40-45 years.....	.....	1	1	.....	.....	.....	2	2	.....	.....	.....
45-50 years.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
50-55 years.....	.....	2	.....	.....	1	.....	1	.....	.....	.....	.....
55-60 years.....	2	.....	.....	1	.....	2	.....	1	1	.....	.....
60-65 years.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....
65-70 years.....	2	1	.....	1	.....	.....	.....	.....	.....	.....	.....
75-80 years.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....

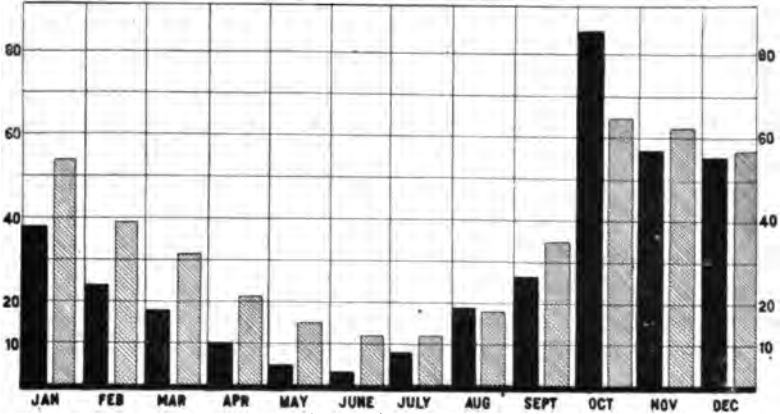
DIPHTHERIA DEATHS

BY MONTHS

■ - 1909

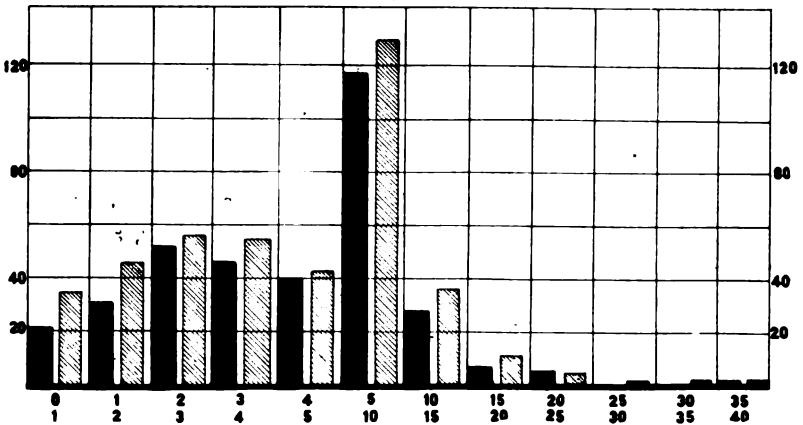
▨ - AVERAGE FOR LAST TEN YEARS

CHART 10



BY AGES

CHART 11



MONTHLY ANALYSIS FOR DIPHTHERIA DEATHS.

January, 1909.—One hundred and seventy cases in 45 counties, with 34 deaths. In the corresponding month last year, 203 cases in 40 counties, with 30 deaths. The disease prevailed unusually in the following counties: Allen, 14; Clark, 8; Elkhart, 11; Perry, 14; Vanderburgh, 24.

February, 1909.—Ninety-three cases reported in 33 counties, with 18 deaths. In the same month last year, 102 cases in 26 counties with 24 deaths. The disease prevailed unusually in the following counties: Allen, 10 cases, 2 deaths; Floyd, 6 cases, no deaths; Madison, 9 cases, no deaths; Warrick, 11 cases, 1 death.

March, 1909.—Fifty-four cases reported from 22 counties, with 16 deaths. In the same month last year, 167 cases reported in 29 counties, with 18 deaths. The disease did not reach an epidemic form in any locality. Allen County reports the greatest number of cases, namely, 10.

April, 1909.—Sixty cases reported in 21 counties, with 9 deaths. In the same month last year, 82 cases in 23 counties, with 10 deaths. Of course all cases of diphtheria were not reported, and many were doubtless diagnosed as tonsilitis or from mild angina.

May, 1909.—Fifty-six cases reported in 21 counties, with 5 deaths. In the same month last year, 37 cases in 13 counties, with 9 deaths.

June, 1909.—Fifty-four cases in 17 counties, with 2 deaths. In the same month last year, 56 cases in 21 counties, with 5 deaths.

July, 1909.—Forty-one cases in 17 counties, with 8 deaths. In the corresponding month last year, 49 cases from 20 counties, with 8 deaths. In the preceding month, 54 cases in 17 counties, with 2 deaths.

August, 1909.—One hundred and thirty cases in 30 counties, with 17 deaths. In the corresponding month last year, 99 cases in 26 counties, with 12 deaths. By this comparison a large increase is to be noted.

September, 1909.—Two hundred and seventy-nine cases in 42 counties, with 24 deaths. In the corresponding month last year, 352 cases in 32 counties, with 29 deaths. In the preceding month, 130 cases in 30 counties, with 17 deaths.

October, 1909.—Four hundred and thirty-nine cases, with 155 deaths, reported in 61 counties. In the corresponding month last year, 596 cases, with 41 deaths, in 49 counties. The disease was epidemic in the following counties: Floyd, 37 cases; Greene, 16;

Harrison, 16; Laporte, 19; Marion, 92; Pike, 10; Vanderburgh, 54; Vigo, 27.

November, 1909.—Four hundred and forty-one cases in 62 counties, with 50 deaths. In the corresponding month last year, 361 cases in 55 counties, with 44 deaths. The disease was epidemic in the following counties: Allen, 10; Cass, 21; Daviess, 10; Dearborn, 9; Hamilton, 14; Jackson, 24; Knox, 10; Marion, 37; Parke, 13; Vanderburgh, 12.

December, 1909.—Three hundred and twenty cases in 44 counties, with 46 deaths. In the corresponding month last year 299 cases in 49 counties with 37 deaths. The disease prevailed unusually in the following counties: Allen, 19 cases; Clay, 9; Daviess, 7; Greene, 10; Lagrange, 8; Marion, 67; Owen, 9; Randolph, 10; Vanderburgh, 25; Vigo, 14.

SCARLET FEVER.

DEATHS BY MONTHS, WITH AVERAGE FOR LAST TEN YEARS:

MONTH.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Aver.
January.....	17	24	22	22	24	18	11	6	13	11	16
February.....	15	18	19	13	24	11	9	9	17	11	14
March.....	17	27	18	10	33	20	12	18	10	7	17
April.....	16	18	11	9	22	21	7	9	15	11	13
May.....	12	9	5	4	15	11	7	5	5	14	8
June.....	9	12	3	6	9	4	10	3	5	9	7
July.....	2	5	6	13	4	14	7	10	4	9	7
August.....	1	5	6	8	6	6	3	5	1	6	4
September.....	5	4	8	13	7	5	6	3	6	8	6
October.....	14	3	19	16	12	5	8	7	4	21	10
November.....	13	10	24	18	17	11	14	8	5	19	13
December.....	20	14	9	34	19	7	7	8	10	25	15
Totals.....	141	149	150	166	192	133	101	91	95	151	136

DEATHS BY AGES, WITH AVERAGE FOR LAST TEN YEARS.

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Aver.
Under 1 year.....	7	7	11	13	13	10	5	4	4	9	8
1-2 years.....	17	14	13	9	27	18	13	7	8	22	14
2-3 years.....	22	29	17	17	33	20	10	15	17	15	19
3-4 years.....	20	18	24	22	25	17	15	13	12	20	18
4-5 years.....	18	22	14	19	18	14	10	7	10	15	14
5-10 years.....	42	37	43	55	61	38	27	31	22	53	40
10-15 years.....	7	8	14	19	11	11	8	8	9	11	10
15-20 years.....	4	4	3	3	2	1	2	5	5	3	3
20-25 years.....	1	2	3	3	1	1	10	.....	2	1	2
25-30 years.....	.....	3	1	.....	.....	2	.....	1	4	.....	1
30-35 years.....	.....	1	1	1	.....	.....	1	.....	2	1	.....
35-45 years.....	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....
45-50 years.....	.....	1	.....	.....	1	1	.....	.....	.....	.....	.....
80-90 years.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....

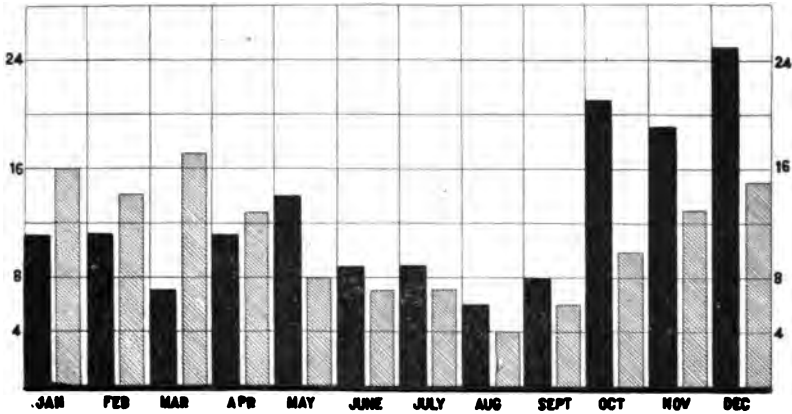
SCARLET FEVER DEATHS

BY MONTHS

■ - 1909

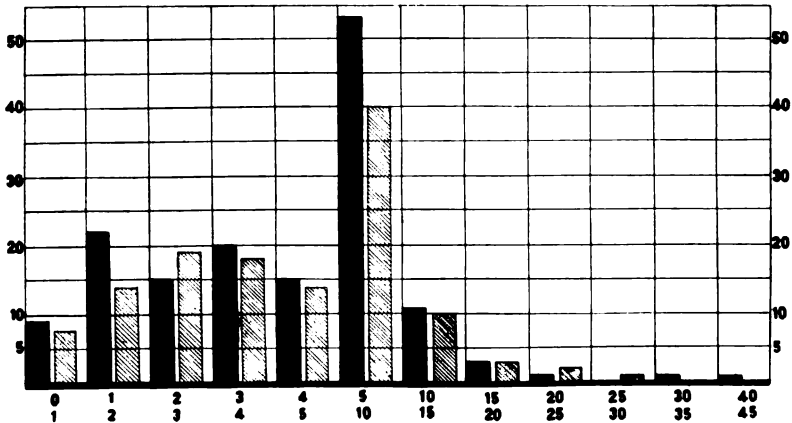
▨ - AVERAGE FOR LAST TEN YEARS

CHART 12



BY AGES

CHART 13



DIARRHOEAL DISEASES.

UNDER FIVE YEARS OF AGE.

Deaths by Months, with Average for Last Ten Years.

Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907. under 2 years	1908.	1909.	Aver.
January.....	19	14	15	11	29	26	28	34	39	34	24
February.....	11	12	14	22	30	30	25	32	33	46	25
March.....	21	17	14	20	33	36	29	35	34	57	29
April.....	13	26	21	17	24	22	39	18	48	39	26
May.....	32	19	29	25	29	35	42	35	39	46	33
June.....	111	81	116	83	54	116	71	81	89	165	96
July.....	480	468	455	323	307	359	321	396	322	480	389
August.....	627	500	569	475	498	469	484	503	420	441	496
September.....	436	393	337	275	344	343	447	280	292	304	345
October.....	198	167	130	140	204	186	232	160	204	146	176
November.....	80	64	56	36	49	54	66	40	82	50	57
December.....	21	15	23	22	28	24	39	25	32	53	28
Totals.....	2,049	1,776	1,779	1,449	1,629	1,700	1,823	1,639	1,635	1,841	1,732

FIVE YEARS OF AGE AND OVER.

Deaths by Months, with Average for Last Ten Years.

Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Aver.
January.....	27	30	25	24	30	32	26	40	38	30	28
February.....	22	22	23	20	38	29	26	33	26	28	27
March.....	32	24	28	27	37	42	35	41	35	37	33
April.....	21	17	28	23	28	27	41	38	28	23	27
May.....	26	28	30	40	33	28	30	29	42	38	33
June.....	15	31	25	36	30	44	29	63	57	46	37
July.....	139	130	129	93	73	87	78	150	116	85	96
August.....	137	169	170	131	110	152	119	203	166	106	146
September.....	118	123	86	116	104	94	130	122	143	76	111
October.....	69	72	59	64	63	67	92	62	88	34	67
November.....	36	39	39	26	32	28	39	42	50	35	36
December.....	26	42	27	22	33	28	40	24	28	27	29
Totals.....	668	727	660	622	611	658	695	847	817	563	687

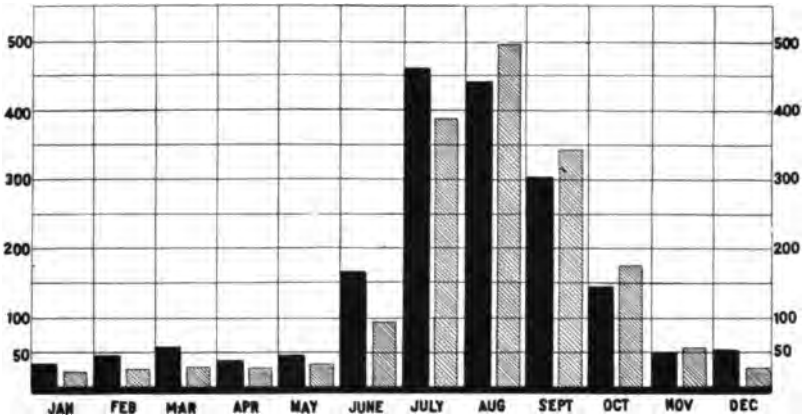
DIARRHOEAL DISEASES

BY MONTHS

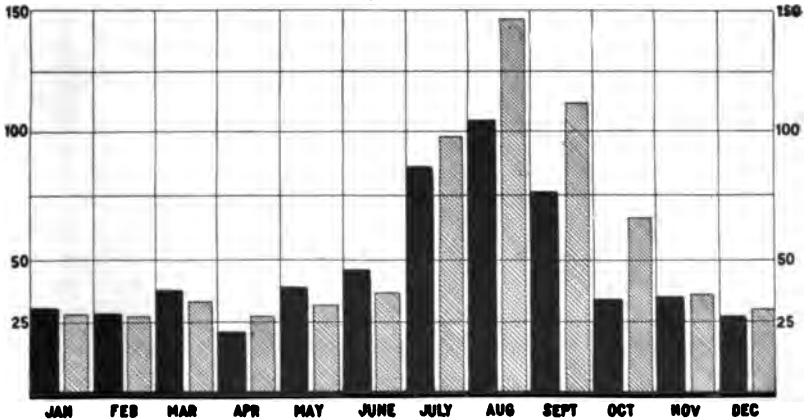
■ - 1909

▨ - AVERAGE FOR LAST TEN YEARS

UNDER TWO YEARS OF AGE
CHART 14



TWO YEARS AND OVER
CHART 15



DIARRHOEAL DISEASES.

Deaths by Ages, with Average for Last Ten Years.

Ages.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Aver.
Under 1 year.....	1,305	1,118	1,070	894	1,068	1,115	1,240	1,202	1,202	1,340	1,155
1-2 years.....	534	513	533	421	384	406	417	437	433	501	457
2-3 years.....	152	139	140	110	112	120	116	105	126	125	125
3-4 years.....	44	28	34	19	40	36	31	33	34	25	32
4-5 years.....	34	17	13	11	21	13	20	11	16	18	74
5-10 years.....	25	36	23	12	31	29	17	19	16	19	22
10-15 years.....	1	9	8	11	13	10	6	12	6	7	8
15-20 years.....	8	13	7	6	4	8	8	4	3	5	6
20-25 years.....	11	15	14	9	15	17	12	16	14	8	13
25-30 years.....	9	13	15	12	13	16	21	7	14	11	12
30-35 years.....	9	32	12	20	14	10	10	10	11	14	14
35-40 years.....	19	18	28	14	15	22	17	20	13	11	17
40-45 years.....	22	13	14	15	19	20	19	13	12	20	16
45-50 years.....	21	22	20	24	19	13	14	13	19	17	18
50-55 years.....	31	31	30	36	33	25	30	30	20	29	29
55-60 years.....	43	46	57	37	37	51	37	35	46	19	40
60-65 years.....	63	62	60	45	57	72	59	61	45	42	56
65-70 years.....	77	91	73	67	68	68	90	78	78	98	78
70-75 years.....	82	70	80	98	88	93	99	97	81	92	88
75-80 years.....	69	83	98	91	88	95	107	117	103	132	98
80-90 years.....	94	107	102	94	89	104	124	141	132	148	113
90 years and over.....	.....	22	11	14	12	13	18	20	22	33	16

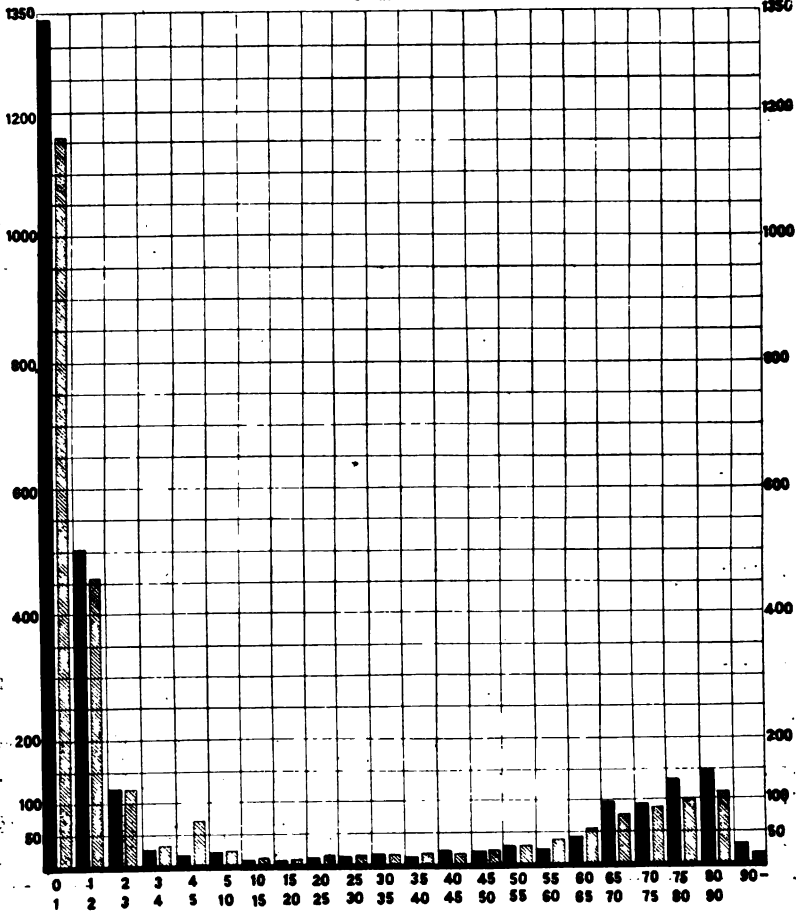
DIARRHOEAL DISEASES

BY AGES

■ — 1909

▨ — AVERAGE FOR LAST TEN YEARS

CHART 16



INFLUENZA.

DEATHS BY MONTHS, WITH AVERAGE FOR LAST TEN YEARS.

Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Aver.
January.....	53	269	60	31	45	114	53	71	172	54	77
February.....	70	349	84	51	90	221	44	159	316	77	146
March.....	98	180	51	87	146	151	48	234	167	126	128
April.....	101	128	37	60	70	37	30	51	70	135	71
May.....	34	42	15	37	20	15	7	52	40	42	30
June.....	19	12	4	10	7	7	2	14	13	9	9
July.....	12	9	8	7	2	5	4	7	9	9	7
August.....	4	10	3	9	5	.....	2	4	14	4	5
September.....	1	3	7	3	1	4	3	4	5	7	3
October.....	13	5	8	7	4	4	8	2	4	4	5
November.....	8	12	8	10	18	12	11	17	22	10	12
December.....	11	30	17	36	26	21	12	51	35	27	26
Totals.....	424	1,049	302	348	434	591	224	666	867	504	540

DEATHS BY AGES, WITH AVERAGE FOR LAST TEN YEARS.

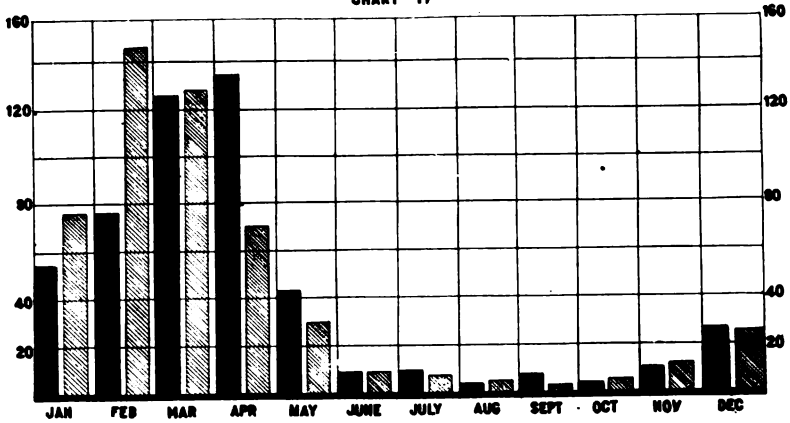
Age.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Aver.
Under 1 year.....	35	66	47	13	32	43	14	26	32	48	35
1-2 years.....	7	14	7	3	4	10	3	12	11	11	8
2-3 years.....	3	11	4	3	1	6	5	5	10	5	5
3-4 years.....	1	5	4	2	4	.....	.....	3	6	4	2
4-5 years.....	2	4	4	2	.....	1	2	.....	1	2	1
5-10 years.....	7	11	9	2	3	5	2	4	10	2	5
10-15 years.....	2	6	4	6	7	4	3	6	10	9	5
15-20 years.....	3	12	3	3	6	7	4	11	16	7	7
20-25 years.....	5	20	4	4	3	16	3	11	13	6	8
25-30 years.....	13	22	2	5	8	3	.....	5	11	9	7
30-35 years.....	7	22	2	5	7	9	2	18	15	.....	.....
35-40 years.....	9	27	6	5	7	9	4	14	24	9	11
40-45 years.....	17	33	1	6	6	16	3	9	21	10	12
45-50 years.....	17	33	6	7	13	14	10	23	30	8	16
50-55 years.....	8	43	12	16	9	17	13	26	37	14	19
55-60 years.....	15	41	14	16	19	32	6	38	34	35	25
60-65 years.....	23	57	5	28	22	40	11	24	50	29	28
65-70 years.....	47	103	35	27	37	47	24	73	86	46	52
70-75 years.....	59	159	35	53	73	67	31	94	115	52	73
75-80 years.....	55	151	39	58	61	86	31	89	131	80	78
80-90 years.....	83	180	51	74	94	132	43	151	182	103	109
90 years and over.....	.....	26	7	9	15	23	8	23	21	15	14

INFLUENZA DEATHS BY MONTHS

■ - 1909

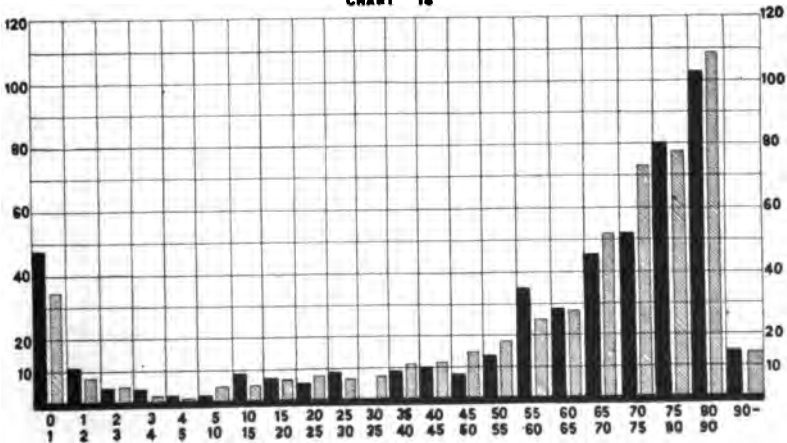
▨ - AVERAGE FOR LAST TEN YEARS

CHART 17



BY AGES

CHART 18



MEASLES.

DEATHS BY MONTHS, WITH AVERAGE FOR LAST TEN YEARS.

Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Aver.
January.....	2	14	2	.....	28	.....	2	7	8	5	4
February.....	2	22	5	4	31	1	2	10	57	15	14
March.....	5	37	26	6	52	.....	.....	28	52	23	22
April.....	25	37	5	12	50	2	7	40	47	41	26
May.....	27	31	14	10	29	.....	4	51	24	27	21
June.....	7	10	4	7	9	1	3	31	11	14	9
July.....	5	77	7	4	6	.....	.....	23	2	13	6
August.....	4	2	5	3	3	1	1	5	2	9	3
September.....	2	.....	.....	6	2	.....	.....	2	1	3	1
October.....	1	.....	.....	4	2	.....	.....	4	4	.....	1
November.....	2	.....	.....	6	.....	1	2	3	.....	3	1
December.....	3	1	1	11	.....	.....	2	9	1	3	3
Totals.....	85	161	69	73	212	6	23	213	209	156	120

DEATHS BY AGES, WITH AVERAGE FOR LAST TEN YEARS.

Age.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Aver.
Under 1 year.....	24	310	28	17	65	3	5	49	50	27	30
1-2 years.....	10	22	11	19	27	.....	9	55	29	39	22
2-3 years.....	8	15	6	6	26	1	1	30	13	19	12
3-4 years.....	5	9	2	3	7	.....	.....	9	14	9	5
4-5 years.....	2	6	3	2	10	.....	1	6	8	7	4
5-10 years.....	10	14	5	3	13	.....	1	20	26	20	11
10-15 years.....	3	12	.....	3	10	.....	.....	6	9	9	5
15-20 years.....	1	7	3	5	9	.....	1	7	16	2	5
20-25 years.....	5	9	2	2	6	.....	1	3	5	5	3
25-30 years.....	4	1	1	4	1	.....	1	6	8	6	3
30-35 years.....	4	4	3	1	5	.....	2	1	4	2	2
35-40 years.....	2	6	.....	1	11	.....	1	6	7	2	3
40-45 years.....	3	7	2	1	7	.....	.....	4	5	5	3
45-50 years.....	1	3	1	1	6	.....	.....	2	3	2	1
50-55 years.....	2	2	2	3	2	1	.....	2	5	2	2
55-60 years.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
60-65 years.....	.....	2	.....	.....	1	.....	.....	3	.....	.....	.....
65-70 years.....	.....	.....	4	1	1	.....	.....	1	1	.....	.....
70-75 years.....	.....	1	1	.....	1	.....	.....	.....	3	.....	.....
75-80 years.....	.....	1	.....	.....	2	.....	.....	2	1	.....	.....
80-90 years.....	1	.....	.....	.....	2	.....	.....	1	.....	.....	.....
90 years and over.....	.....	.....	1	1	.....	1	.....	.....	.....	.....	.....

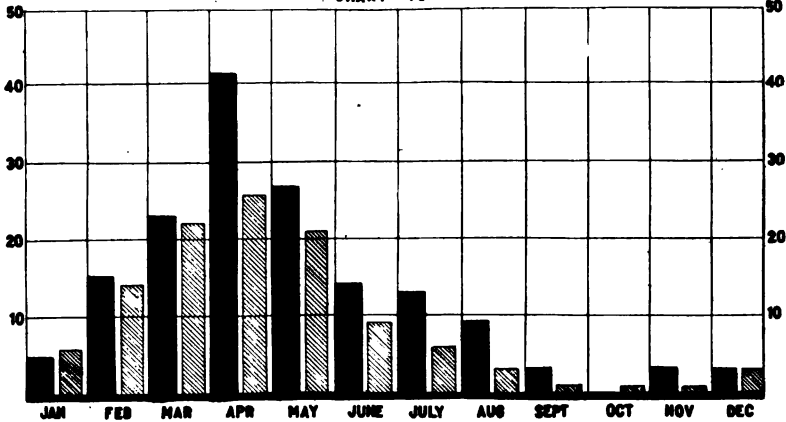
MEASLES DEATHS

BY MONTHS

■ - 1909

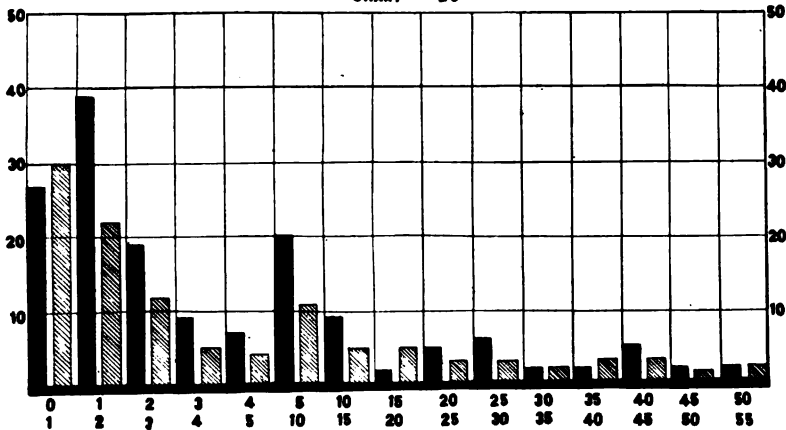
▨ - AVERAGE FOR LAST TEN YEARS

CHART 19



BY AGES

CHART 20



SMALLPOX.

TABLE GIVING NUMBER OF DEATHS BY MONTHS FOR LAST TEN YEARS.

Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	Total.	Aver.
January.....	1	2	4	51	8	7	.....	3	.....	.....	76	7
February.....	4	2	2	55	5	11	.....	2	1	.....	82	8
March.....	2	4	3	31	3	3	.....	.....	2	.....	48	4
April.....	3	1	8	21	6	3	1	1	2	1	47	4
May.....	2	3	1	10	7	3	.....	1	.....	1	28	2
June.....	2	3	2	3	3	4	.....	1	3	.....	21	2
July.....	3	1	15	4	6	3	1	.....	.....	2	35	3
August.....	.....	.....	1	14	3	.....	.....	.....	.....	.....	18	1
September.....	2	1	7	2	17	.....	2	.....	.....	.....	31	3
October.....	.....	2	10	.....	18	.....	3	.....	.....	.....	33	3
November.....	.....	1	4	1	13	.....	.....	.....	.....	1	20	2
December.....	.....	1	18	3	8	1	1	.....	2	.....	24	3
Totals.....	19	21	75	195	97	35	8	8	10	5	473	47

January, 1909.—One hundred and forty-eight cases in 24 counties, with no deaths. In the same month last year, 240 cases in 32 counties, and no deaths. The following counties reported smallpox present: Allen, 3 cases; Cass, 1; Dearborn, 6; Decatur, 1; Delaware, 9; Elkhart, 3; Gibson, 1; Grant, 5; Greene, 1; Hamilton, 4; Harrison, 10; Henry, 7; Howard, 4; Madison, 5; Marion, 1; Miami, 7; Noble, 1; Rush, 15; Spencer, 2; St. Joseph, 20; Tippecanoe, 10; Tipton, 2; Vanderburgh, 6; Warren, 30.

February, 1909.—One hundred thirty-eight cases reported in 22 counties, with no deaths. In the same month last year, 122 cases in 35 counties, with 1 death. The following counties reported the disease present: Allen County, 1 case; Carroll, 3; Clinton, 17; Dearborn, 8; Decatur, 4; Elkhart, 4; Floyd, 1; Fountain, 19; Hamilton, 14; Henry, 5; Howard, 5; Jennings, 8; Johnson, 1; Laporte, 6; Montgomery, 2; Posey, 3; Rush, 4; Tippecanoe, 27; Warren, 1; Warrick, 1; Wayne, 1; Wells, 23.

March, 1909.—One hundred and twenty-one cases reported from 16 counties, with no deaths. In the same month last year 284 cases reported from 35 counties, with 2 deaths. The following counties reported the disease present: Allen, 1 case; Benton, 1; Carroll, 7; Clinton, 3; Decatur, 4; Elkhart, 14; Gibson, 4; Hamilton, 11; Jennings, 3; Johnson, 1; Kosciusko, 11; St. Joseph, 1; Vermillion, 4; Wayne, 8; Wells, 35; White, 14.

April, 1909.—Seventy-four cases reported from 18 counties, with 1 death. In the same month last year, 324 cases in 35 counties, with 2 deaths. The following counties reported the disease present:

Allen, 10 cases; Carroll, 4; Dekalb, 1; Delaware, 1; Elkhart, 1; Fayette, 1; Gibson, 6; Henry, 1; Howard, 2; Johnson, 1; Montgomery, 2; Randolph, 1; Rush, 1; St. Joseph, 2; Tippecanoe, 6; Vermillion, 36; Wayne, 3, with 1 death; White, 1.

May, 1909.—Eighty-eight cases reported from 13 counties, with 1 death. In the same month last year, 275 cases reported from 33 counties, with no deaths. The following counties reported the disease present: Allen, 7 cases; Dearborn, 4; Delaware, 1; Gibson, 5; Grant, 2; Montgomery, 4; Parke, 1; Pulaski, 2; St. Joseph, 9; Vanderburgh, 7; Vermillion, 38; Wayne, 6, with 1 death; White, 2.

June, 1909.—One hundred and three cases reported from 41 counties, with no deaths. In the corresponding month last year, 65 cases in 13 counties, with no deaths. The following counties reported the disease present: Allen, 27 cases; Carroll, 1; Clay, 4; Dekalb, 1; Fayette, 1; Grant, 1; Greene, 2; Marion, 2; Montgomery, 5; St. Joseph, 24; Vanderburgh, 20; Vermillion, 3; Vigo, 4; Wayne, 4.

July, 1909.—Sixty-one cases reported from 8 counties, with 2 deaths. In the corresponding month last year, 65 cases in 13 counties, with no deaths. The following counties reported the disease present: Allen, 46 cases; Delaware, 3; Fountain, 1 case, with 1 death; Grant, 1; Greene, 2 cases, with 1 death; Tipton, 1; Vermillion, 2; Wayne, 5.

August, 1909.—No deaths reported. The cases numbered 29 in 2 counties. Allen County 28, St. Joseph 1. It is more than probable that a number of cases of smallpox in mild form existed, but were unrecognized. In the corresponding month last year 45 cases were reported from 7 counties with no deaths.

September, 1909.—Fifty-one cases reported from 9 counties with no deaths. In the corresponding month last year 32 cases in 8 counties with no deaths. In the preceding month, 29 cases in 2 counties with no deaths. The following counties reported the disease present: Adams, 3 cases; Allen, 20; Grant, 11; Greene, 11; Huntington, 1; Johnson, 2; Monroe, 1; Vanderburgh, 1; Whitely, 1.

October, 1909.—No deaths were reported. The cases reported numbered 112, in the following counties: Adams, 4; Allen, 59; Delaware, 15; Grant, 5; Greene, 6; Knox, 7; Marshall, 7; Randolph, 1; St. Joseph, 5; Vanderburgh, 8. The cases in Allen County all occurred in the city of Fort Wayne. The first cases were mistaken

for chickenpox and the health board appealed to the U. S. Public Health and Marine Hospital Service to send an expert to settle the question of diagnosis. The expert was sent and agreed with the city board of health that all of the cases quarantined by them were smallpox.

November, 1909.—One hundred and eighty-five cases reported in 13 counties, with 1 death. The following counties reported the disease present: Allen, 86 cases and 1 death; Carroll, 1; Daviess, 1; Delaware, 5; Grant, 8; Jefferson, 1; Marshall, 14; Noble, 1; Steuben, 1; St. Joseph, 4; Warren, 1; Wayne, 1. In the corresponding month last year there were reported 56 cases in 10 counties, with no deaths.

December, 1909.—Ninety-two cases in 14 counties, with no deaths. In the same month last year, 128 cases in 23 counties, with 2 deaths. In the preceding month, 185 cases in 13 counties, with 1 death. The following counties reported the disease present: Allen, 11 cases; Clark, 19; Clinton, 4; Daviess, 7; Dekalb, 2; Grant, 15; Laporte, 1; Marion, 1; Marshall, 1; Noble, 1; Shelby, 2; Steuben, 1; St. Joseph, 8; Tippecanoe, 1.

VIOLENCE.

	1908.	1909.
January	212	198
February	172	181
March	174	215
April	186	197
May	242	195
June	223	217
July	234	228
August	251	266
September	244	205
October	209	220
November	196	200
December	184	221
Total	2,527	2,543

	1908.	1909.
Accidents	2,021	2,030
Suicides	384	404
Homicides	122	109
Mob violence .....	...	None.

MONTHLY RECORD OF VIOLENCE DEATHS.

January, 1909.—The deaths by violence numbered 158. In the corresponding month last year, 195. Of the violence deaths, 70 occurred in the cities, and 88 in the country. Murders numbered 11, males 7, females 4. Suicides 32, males 21, females 11. Accidents numbered 115, males 81, females 34. Of the murders, 6 were by gun shots, 2 cutting and stabbing, 2 strangulation, 1 fracture of the skull. Of the suicides, gunshots 6, hanging 2, strangulation 3, cutting and stabbing 3, artificial gas 2, carbolic acid 12, chloroform and strychnia 4. Of the accidents, steam railroads caused 19 deaths, interurban railroads 4, street cars 5, burns and scalds 17, crushing injuries 15, drowning 3, gunshots 6, falls 13, horses and vehicles 5, ptomaine poison 4, and the remainder by various methods.

February, 1909.—The violence deaths numbered 160. In the same month last year, 146. Thirty-seven of these occurred in the cities and 123 in the country. Murders numbered 13, suicides 22, accidents 125. Of the murders, 7 were by gunshots, 6 males and 1 female; 3 by cutting and stabbing, 2 males and 1 female; strangulation, 1 male; blunt instrument, 1 male; miner's pick, 1 male. Of the 22 suicides, 19 were male and 3 females. Methods chosen

were: Gunshots 6, all males; carbolic acid 10, males 8, females 2; hanging 3, all males; artificial gas 1, female; poisons 2, males. Of the accidental deaths, steam railroads caused 21, interurbans 6, street railways 2, crushing injuries 14, machinery 3, horses and vehicles 4, falls 16, burns and scalds 25, drowning 4, gunshots 3, accidents in mining 4, asphyxiation 3, poisons 4, ptomaine poisoning 1, puncture wounds 2, injuries at birth 8, exposure 2, traumatic injuries 3, tetanus 1.

March, 1909.—Total deaths 191. In the same month last year, 154. Of the violence deaths, 10 were murders, 33 suicides, and the remainder accidents. Of the murders, 7 were by gunshots and all were males, and the remainder were by blunt instruments, 1 male and 2 females. Of the suicides, 13 were females and 20 were males. The methods chosen were: Gunshots 6, hanging, 3, cutting and stabbing 4, drowning 1, carbolic acid 13, poisons 3, artificial gas 2, throwing self before railroad train 1. Of the accidental deaths, steam railroads caused 26 and interurban and street cars 4; crushing injuries 25, machines 6, burns and scalds 13, gunshots 4, drowning 6, falls 15, horses and vehicles 12, ptomaine poisoning 4, other poisons 6, mining accidents 9, and the remainder by various methods.

April, 1909.—Deaths from violence, 176. In the same month last year, 154. Of the violence deaths, 8 were murders, 31 suicides and the remainder accidents. Of the murders all were males, 5 were killed by gunshots; 2 were homicides, kind not given, and one by cutting. Of the suicides, 19 were males and 12 females. The methods chosen were gunshots 11, 1 being a female and the remainder males; drowning, 3; hanging, 2; strangulation by cord, 1; carbolic acid, 4; opium and morphine, 4; strychnine 2; lysol and chloroform, 2; and not named, 2. Of the accidental deaths, steam railroads killed 25; street cars, 4; crushing injuries, 22; burns and scalds, 21; drowning, 4; gunshots, 3; falls, 21; horses and vehicles, 27; suffocation and strangulation, 10; lightning and electricity, 5; poisons, 5; hanging, 1; and the remainder by various ways.

May, 1909.—Deaths numbered 172. Same month last year, 221 deaths. Of the violence deaths, 12 were murders, 35 suicides, 125 accidents. Of the murders, 8 were caused by gunshots, 6 males and 2 females; 3 were caused by fractured skulls, 2 males and 1 female; 1 method not named. Of the suicides, 7 were gunshots, 6 by hanging, 2 by cutting and stabbing, 2 by illuminating gas, 14 by carbolic acid, 3 by other poisons, 1 by jumping from window. Of the acci-

dental deaths, 15 were caused by steam railroads, 7 by street cars, 2 by automobiles. Crushing injuries caused 19; mines, 13; drowning, 13; gunshots, 2; falls, 24; horses and vehicles, 9; ptomaine poisoning, 2; mushroom poisoning, 2; asphyxiation, 5; explosion, 2; lightning, 2; and the remainder by various methods.

June, 1909.—Deaths numbered 200. Same month last year, 207. Of the 200 deaths, 7 were murdered, 38 suicides and 155 accidents. Of the murders, all were males; 5 were killed by gunshots, 1 by fracture of skull and 1 by stabbing. Of the suicides, 26 were males and 10 females; 8 chose gunshots, 5 hanging, 7 drowning, 2 knife wounds, 1 jumping from fourth floor window, 9 carbolic acid, 5 poisons, 1 artificial gas, 1 stepping in front of engine. The last was a woman. Of the accidental deaths, steam railroads killed 26, interurbans 11, street cars 5, automobiles 2, crushing injuries and falls 26, mine accidents 7, burns and scalds 6, drowning 36, gunshots 4, horses and vehicles 10, lightning and electricity 7, sunstroke 2, paris green and other poisons 5, ptomaine poison 1, and the remainder by various methods.

July, 1909.—Deaths numbered 196. In the corresponding month last year, 207. In the preceding month, 200. Of the 196 deaths, 7 were murders, 36 suicides, and 153 accidents. Of the murders, 4 males and 1 female were killed by gunshots; 1 male by opium poison and 1 not reported. Of the suicides, 23 were males and 13 females. The methods chosen were: Gunshots, 8; hanging, 6; cutting and stabbing, 2; drowning, 2; carbolic acid, 15; morphine, 2; and paris green, 1. Of the accidental deaths steam railways killed 20; interurbans, 1; street cars, 3; automobiles, 4; fractures, 5; drowning, 30; gunshots, 5; burns and scalds, 11; falls, 21; horses and vehicles, 10; lightning and electricity, 13; ptomaine poisoning, 5; crushing injuries, 5, and the remainder by various methods.

August, 1909.—Deaths from violence, 233. The corresponding month last year, 220. There were 7 murders, 6 males and 1 female. There were 30 suicides, 9 males and 31 females. The methods chosen or self-destruction were: Carbolic acid, 7 males, 4 females; arsenic, 1 male; arsenic and rough-on-rats, 3 males, 3 females; morphine, 3 males; gunshots, 8 males, 1 female; hanging, 6 males; drowning, 3 males, 1 female. Of the 186 accidental deaths, 146 were males and 40 females. Steam railroads killed 41; street cars and interurbans, 11; automobiles, 11; machinery, 4; fracture of bones and crushing injuries, 14; burns and scalds, 11; lightning and elec-

tricity, 9; horses and vehicles, 8; gunshots, 4; falls, 24; ptomaine poisoning, 4; powder explosion, 2; and the remainder in various ways.

September, 1909.—Deaths numbered 179. In the corresponding month last year, 217. In the preceding month, 233. Of the 179 deaths, 5 were murders, 23 suicides and 151 accidents. Of the murders, 4 males were killed by gunshots, 1 female by fracture of skull. Of the suicides, 6 males chose gunshots; hanging, 2 males and 1 female; cutting and stabbing, 3 males; jumping in front of trains, 1 male; carbolic acid poisoning, 4 males and 2 females; other poisons, 2 males and 2 females. Of the accidental deaths, steam railways killed 34, interurbans 1; street cars, 2; automobiles, 1; machinery, 5; crushing injuries, 7; fractures, 10; falls, 17; burns and scalds, 12; drowning, 7; gunshots, 8; horses and vehicles, 14; electricity, 4; ptomaine poisoning, 2; and the remainder by various methods.

October, 1909.—Violence deaths numbered 190; rate 82.0. In the corresponding month last year, 130; rate, 56.1. Of the 190 deaths by violence, 144 were males and 46 females. The murders numbered 14, and of them 6 males and 3 females were killed by gunshot, 2 males by body blows, 1 male by fracture of skull, 1 male by stabbing, and 1 unknown. There were 41 suicides, 35 males and 6 females. The methods chosen were: Gunshot, 15; drowning, 4; hanging, 1; throwing self on railroad track, 1; carbolic acid, 10; opium, 4; arsenic, 2; chloroform, 2; artificial gas, 1; knifing self, 1. Of the accidental deaths, steam railroads caused 21, interurbans 2, street cars 7, automobiles 2, crushing injuries 24, machinery 4, mines 3, burns and scalds 17, gunshots 6, falls 21, horses and vehicles 8, ptomaine poisoning 2, strychnine 2, asphyxia 3, other poisons 3, electricity 2, and the remainder were by various means.

November, 1909.—The violence deaths numbered 176. In the corresponding month last year, 176. Of the violence deaths, 10 were murders, 28 suicides and the remainder accidents. Of the murders, 8 were males and 2 females. Of the suicides, 19 were males and 9 females. The methods of self-destruction chosen by the suicides were: Gunshot, 8; hanging, 5; cutting throat and burning, 2; carbolic acid, 9; paris green, 2; morphine, 2. Of the accidental deaths, 28 were caused by steam railroads; 3 by interurbans; 2, street cars; 1, automobile; 20, various fractures; machinery, 2; mining, 5; burns and scalds, 8; gunshot, 13; falls, 23; horses and vehicles, 4; drowning, 5, and the remainder by various methods.

December, 1909.—The violence deaths numbered 195. In the corresponding month last year 140, an increase of 55 by this comparison. Of the violence deaths 6 were murders, 26 suicides, 163 accidental. Of the murders 1 male and 2 females were by gunshots; 1 male by stabbing; 1 female by blunt instrument; 1 male, method not given. Of the suicides, 4 males suicided with gunshots; 4 males and 1 female by hanging; 2 males and 1 female by asphyxiation with gas; 3 males and 6 females by carbolic acid; 3 males and 2 females by various poisons. Of the accidental deaths steam railroads caused 29, interurban railroads 3; street cars, 4; automobiles, 3; horses and vehicles, 2; crushing injuries, 19; mining accidents, 5; machinery, 4; drowning, 7; burns and scalds, 27; falls, 20; injuries at birth, 12; and the remainder by various causes.

CANCER.

	1908.	1909.
January	117	141
February	134	152
March	120	145
April	162	141
May	153	162
June	140	149
July	171	163
August	150	169
September	155	160
October	171	150
November	137	145
December	129	151
Total	1,739	1,828

MONTHLY ANALYSIS OF DISEASE PREVALENCE.

January, 1909.—Reports show fewer deaths in January, 1909, than in the corresponding month last year. They also show less sickness. Tonsillitis was reported as the most prevalent disease, while influenza, pneumonia and bronchitis were the three most prevalent diseases in January, 1908. Following is the order of disease prevalence: Tonsillitis, pneumonia, rheumatism, bronchitis, influenza, diphtheria and membranous croup, scarlet fever, typhoid fever (enteric), measles, pleuritis, chickenpox, whooping cough, smallpox, diarrhoea, intermittent and remittent fever, erysipelas, inflammation of the bowels, cerebro-spinal meningitis, dysentery, typho-malaria fever, cholera infantum, puerperal fever, cholera morbus.

February, 1909.—There were 440 fewer deaths in February, 1909, than in the same month last year. There was also less sickness. Tonsillitis was reported as the most prevalent disease, and in the same month last year influenza was reported most prevalent. The following is the order of disease prevalence: Tonsillitis, bronchitis, pneumonia, influenza, rheumatism, scarlet fever, pleuritis, diphtheria and croup, measles, whooping cough, chickenpox, typhoid fever, diarrhoea, smallpox, erysipelas, intermittent fever, inflammation of bowels, cerebro-spinal meningitis, typho-malarial fever, dysentery, cholera morbus, puerperal fever, cholera infantum.

March, 1909.—There were 243 more deaths in March, 1909, than in the corresponding month last year. Tonsillitis was the most prev-

alent disease. In the same month last year, influenza was most prevalent and tonsilitis sixth in area of prevalence. The order of disease prevalence was as follows: Tonsilitis, pneumonia, influenza, bronchitis, rheumatism, pleuritis, measles, scarlet fever, typhoid fever (enteric), whooping cough, diarrhoea, intermittent and remittent fever, diphtheria and membranous croup, chickenpox, erysipelas, smallpox, inflammation of bowels, dysentery, puerperal fever, cholera morbus, cerebro-spinal meningitis, cholera infantum, typho-malaria fever.

April, 1909.—Tonsilitis was reported as the most prevalent disease during the month. In the corresponding month last year, rheumatism and bronchitis were both more prevalent than tonsilitis. The order of disease prevalence was as follows: Tonsilitis, rheumatism, bronchitis, influenza, pneumonia, measles, pleuritis, scarlet fever, diarrhoea, typhoid fever, intermittent and remittent fever, erysipelas, whooping cough, diphtheria and membranous croup, smallpox, inflammation of bowels, chickenpox, dysentery, cholera morbus, cerebro-spinal meningitis, puerperal fever, typho-malaria fever, cholera infantum.

May, 1909.—Rheumatism was reported as the most prevalent disease. It was also reported as most prevalent in same month last year. Respiratory diseases show a decrease from preceding month. The order of prevalence was as follows: Rheumatism, tonsilitis, bronchitis, measles, influenza, pneumonia, diarrhoea, pleuritis, scarlet fever, whooping cough, intermittent and remittent fever, typhoid fever, diphtheria and membranous croup, erysipelas, inflammation of bowels, cholera morbus, smallpox, dysentery, puerperal fever, chickenpox, cerebro-spinal meningitis, cholera infantum, typho-malaria fever.

June, 1909.—Rheumatism was reported as the most prevalent disease, which was also the case last month. Diarrhoea, which stood 7th in area of prevalence in May, rose to 2d place in June. The order of prevalence was as follows: Rheumatism, diarrhea, tonsilitis, bronchitis, cholera morbus, measles, dysentery, whooping cough, cholera infantum, typhoid fever, scarlet fever, intermittent fever, smallpox, influenza, inflammation of bowels, pleuritis, diphtheria, croup, pneumonia, erysipelas, typho-malaria fever, chickenpox, cerebro-spinal meningitis, puerperal fever.

July, 1909.—Diarrhoea was reported as the most prevalent disease. This was also the case in the corresponding month last year. The number of deaths under five years of age by diarrhoea were

454, and in the corresponding month last year, 312. Pneumonia falls to twentieth in area of prevalence. The order of disease prevalence for July is as follows: Diarrhoea, cholera morbus, typhoid fever (enteric), rheumatism, cholera infantum, tonsilitis, dysentery, bronchitis, intermittent and remittent fever, inflammation of the bowels, whooping cough, measles, scarlet fever, pleuritis, diphtheria and membranous croup, erysipelas, influenza, smallpox, typho-malaria fever, pneumonia, cerebro-spinal meningitis, puerperal fever, and chickenpox.

August, 1909.—Diarrhoea, as in the preceding month, was reported as the most prevalent disease. The diarrhoeal deaths under 5 numbered 467. Typhoid fever, which was third in area of prevalence in July, rises to second place in August. The order of disease prevalence was as follows: Diarrhoea, typhoid fever, tonsilitis, cholera morbus, rheumatism, cholera infantum, dysentery, bronchitis, intermittent fever, diphtheria and membranous croup, scarlet fever, inflammation of bowels, whooping cough, typho-malaria fever, influenza, measles, pleuritis, erysipelas, pneumonia, cerebro-spinal meningitis, puerperal fever, smallpox, chickenpox.

September, 1909.—Typhoid fever was reported as the most prevalent disease. This was also the case in the corresponding month last year. It stood second in area of prevalence in August. Diarrhoea, which was first in order of prevalence in August, fell to fifth place in September. The order of disease prevalence was as follows: Typhoid fever (enteric), rheumatism, tonsilitis, scarlet fever, diarrhoea, bronchitis, diphtheria and membranous croup, intermittent and remittent fever, dysentery, cholera infantum, cholera morbus, influenza, inflammation of bowels, pneumonia, pleuritis, typho-malaria fever, erysipelas, whooping cough, measles, puerperal fever, smallpox, cerebro-spinal meningitis, chickenpox.

October, 1909.—Typhoid fever, as in the preceding month, and as in the corresponding month last year, shows the greatest area of prevalence. Following is the order of disease prevalence: Typhoid fever, tonsilitis, bronchitis, rheumatism, diphtheria and membranous croup, scarlet fever, intermittent and remittent fever, pneumonia, diarrhoea, influenza, pleuritis, measles, inflammation of bowels, dysentery, whooping cough, chickenpox, cholera morbus, erysipelas, typho-malaria fever, smallpox, cholera infantum, cerebro-spinal meningitis, puerperal fever.

November, 1909.—Tonsilitis was reported as the most prevalent disease. This was also true in the corresponding month last year.

Following is the order of disease prevalence: Tonsilitis, bronchitis, pleuritis, diarrhea, intermittent and remittent fever, measles, chickenpox, whooping cough, smallpox, erysipelas, inflammation of bowels, dysentery, typho-malarial fever, cerebro-spinal meningitis, cholera infantum.

December, 1909.—Tonsilitis, as in the two preceding months, was reported as the most prevalent disease. Pneumonia stood sixth in area of prevalence. Following is the order of disease prevalence of the diseases named: Tonsilitis, bronchitis, rheumatism, scarlet fever, influenza, pneumonia, diphtheria, typhoid fever, measles, pleuritis, diarrhea, chickenpox, intermittent and remittent fever, erysipelas, whooping cough, smallpox, inflammation of bowels, dysentery, puerperal fever, cerebro-spinal meningitis, cholera infantum, cholera morbus, typho-malaria fever.

TABLES

OF

ANNUAL STATISTICAL REPORT

FOR THE YEAR 1909.

TABLE I.

*Deaths in Indiana During the Year Ending December 31, 1909, Statistically
Classified by the International System, with Rates per 100,000 Popu-
lation Based Upon School Census of 1908 Multiplied by $3\frac{1}{2}$ —2,732,550.*

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate per 100,000.
I. GENERAL DISEASES—EPIDEMICS.			
1	Typhoid fever.....	875	32.0
2	Exanthematous typhus.....		
3	Recurrent fever.....	115	4.2
4	Intermittent and malarial fever.....	5	.1
5	Variola or smallpox.....		
6	Measles.....	156	5.7
7	Scarlatina.....	151	5.5
8	Whooping cough.....	378	13.8
9	Croup.....	23	.8
9a	Diphtheria.....	325	11.8
10	Influenza.....	504	18.4
11	Miliary fever.....		
12	Asiatic cholera.....		
13	Cholera nostras.....	25	.9
14	Dysentery.....	285	10.4
15	Bubonic plague.....		
16	Yellow fever.....		
17	Leprosy.....		
18	Erysipelas.....	93	3.4
19	Other epidemic diseases.....	5	.1
20	Purulent septicemia and infection.....	61	2.2
21	Glanders and farcy.....		
22	Malignant pustule and anthrax.....		
23	Rabies.....	7	.2
24	Actinomycosis, trichinosis, etc.....	3	.1
25	Pellegra.....	1	.03
26	Tuberculosis of the larynx.....	63	2.3
27	Tuberculosis of the lungs.....	3,643	133.3
28	Tuberculosis of the meninges.....	230	8.4
29	Abdominal tuberculosis.....	302	11.5
30	Pott's disease.....	21	.7
31	Cold abscess.....	2	.07
32	White swelling.....	27	.9
33	Tuberculosis of other organs.....	76	2.7
34	General tuberculosis.....	115	4.3

TABLE I—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate per 100,000.
35	Scrofula.....	3	.1
36	Syphilis.....	147	5.3
36a	So't chancres.....		
37	Gonorrhea (5 years and over).....	5	.1
38	Gonorrhea (under 5 years).....	8	.1
39	Cancer and other malignant tumors of the buccal cavity.....	65	2.3
40	Cancer and other malignant tumors of the stomach and liver.....	739	27.0
41	Cancer and other malignant tumors of the peritoneum, intestines and rectum.....	184	6.7
42	Cancer and other malignant tumors of the female genital organs.....	281	10.2
43	Cancer and other malignant tumors of the breast.....	171	6.2
44	Cancer and other malignant tumors of the skin.....	165	6.0
45	Cancer and other malignant tumors of other organs.....	223	8.1
46	Other tumors.....	20	.7
47	Acute articular rheumatism.....	96	3.5
48	Chronic rheumatism and gout.....	87	3.1
49	Scurvy.....	3	.1
50	Diabetes.....	391	10.6
51	Kerophthalmic goitre.....	39	1.0
52	Addison's disease.....	17	.6
53	Leukemia.....	34	1.2
54	Anemia chlorosis.....	126	4.6
55	Other general diseases.....	14	.5
56	Acute and chronic alcoholism.....	90	3.2
57	Chronic lead poisoning.....	3	.1
58	Other chronic poisonings (occupational).....	2	.07
59	Other chronic poisonings.....	16	.5
II. LOCAL DISEASES—DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.			
60	Encephalitis.....	41	1.5
61	Simple meningitis.....	196	7.1
61a	Epidemic cerebro-spinal meningitis.....	110	4.0
62	Progressive locomotor ataxia.....	52	1.9
63	Other diseases of the spinal cord.....	151	5.5
64	Congestion and hemorrhage of the brain.....	1,932	70.7
65	Softening of the brain.....	115	4.2
66	Paralysis, cause unspecified.....	286	10.4
67	General paralysis.....	182	6.6
68	Other forms of insanity.....	70	2.5
69	Epilepsy.....	150	5.4
70	Convulsions (non puerperal; 5 years and over).....	1	.03
71	Convulsions (under 5 years).....	81	2.9
72	Tetanus.....	75	2.7
73	Chorea.....	10	.3
74a	Other diseases of the brain.....	80	2.9
74b	Other diseases of the nervous system.....	39	1.4
75	Diseases of the eye and its adnexa.....		
76	Diseases of the ear.....	51	1.8
III. DISEASES OF THE CIRCULATORY SYSTEM			
77	Pericarditis.....	41	1.5
78	Acute endocarditis.....	171	6.2
79	Organic diseases of the heart.....	3,428	125.4
80	Angina pectoris.....	236	8.6
81	Diseases of the arteries, atheroma, aneurism, etc.....	419	15.3
82	Embolism and thrombosis.....	83	3.0
83	Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....	20	.7
84	Diseases of the lymphatic system (lymphangitis, etc.).....	8	.2
85	Hemorrhages.....	29	1.0
86	Other diseases of the circulatory system.....	1	.03

TABLE I—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate per 100,000.
IV. DISEASES OF THE RESPIRATORY SYSTEM.			
87	Diseases of the nasal fossae.....	1	.03
88	Diseases of the larynx.....	43	1.5
89	Diseases of the thyroid body.....	8	.2
90	Acute bronchitis.....	268	9.8
91	Chronic bronchitis.....	262	9.5
92	Broncho-pneumonia.....	873	31.9
93	Pneumonia.....	1,766	64.2
94	Pleurisy.....	55	2.0
95	Congestion and apoplexy of the lungs.....	59	2.1
96	Gangrene of the lungs.....	7	.2
97	Asthma.....	88	3.2
98	Pulmonary emphysema.....	10	.3
99	Other diseases of the respiratory system (phthisis excepted).....	90	.7
V. DISEASES OF THE DIGESTIVE SYSTEM.			
100	Diseases of the mouth and adnexa.....	19	.6
101	Diseases of the pharynx.....	56	2.0
102	Diseases of the esophagus.....	6	.2
103	Ulcer of the stomach.....	83	3.0
104	Other diseases of the stomach (cancer excepted).....	566	20.7
105	Diarrhoea and enteritis (under 2 years).....	1,818	66.5
105a	Chronic diarrhoea (under 2 years).....	23	.8
106	Diarrhoea and enteritis (2 years and over).....	563	20.6
107	Intestinal parasites.....	8	.1
108	Hernia and intestinal obstruction.....	344	12.5
109	Other diseases of the intestines.....	92	3.3
110	Acute yellow atrophy of the liver.....	9	.3
111	Hydatid tumors of the liver.....	282	10.3
112	Cirrhosis of the liver.....	102	3.7
113	Biliary calculi.....	206	7.5
114	Other diseases of the liver.....	4	.1
115	Diseases of the spleen.....	120	4.3
116	Simple peritonitis (non puerperal).....	13	.4
117	Other diseases of the digestive system (cancers and tuberculosis excepted).....	269	9.8
118	Appendicitis and abscess of the iliac fossae.....		
VI. DISEASES OF THE GENITO-URINARY SYSTEM.			
119	Acute nephritis.....	281	10.2
120	Bright's disease.....	1,616	59.1
121	Other diseases of the kidneys and their adnexa.....	65	2.3
122	Calculi of the urinary tract.....	15	.5
123	Diseases of the bladder.....	141	5.1
124	Diseases of the urethra, urinary abscess, etc.....	9	.3
125	Diseases of the prostate.....	84	3.0
126	Nonvenereal diseases of the male genital organs.....	4	.1
127	Metritis.....	4	.1
128	Uterine hemorrhage (nonpuerperal).....	3	.1
129	Uterine tumor (noncancerous).....	39	1.4
130	Other diseases of the uterus.....	23	.8
131	Cysts and other tumors of the ovary.....	34	1.2
132	Other diseases of the female genital organs.....	46	1.6
133	Nonpuerperal diseases of the breast (cancer excepted).....		
VII. PUERPERAL DISEASES.			
134	Accidents of pregnancy.....	60	2.1
135	Puerperal hemorrhage.....	9	.3
136	Other accidents of labor.....	20	.7
137	Puerperal septicemia.....	174	6.3
138	Puerperal albuminuria and convulsions.....	56	2.0
139	Phlegmasia a/ba dolens (puerperal).....	1	.03
140	Other puerperal accidents—sudden death.....	36	1.3
141	Puerperal diseases of the breast.....		

TABLE I—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate per 100,000.
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.			
142	Gangrene.....	106	3.8
143	Carbuncle.....	12	.4
144	Acute abscess, phlegmon.....	9	.3
145	Other diseases of the skin and its adnexa.....	20	.7
IX. DISEASES OF THE LOCOMOTOR SYSTEM.			
146	Nontuberculous diseases of the bones.....	65	2.3
147	Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted).....	2	.07
148	Amputation.....		
149	Other diseases of the organs of locomotion.....		
X. MALFORMATION.			
150	Malformations.....	433	15.8
XI. DISEASES OF INFANCY.			
151	Congenital debility, icterus, sclerema.....	1,314	48.0
152	Other diseases peculiar to early infancy.....	87	3.1
153	Lack of care.....	53	1.9
XII. DISEASES OF OLD AGE.			
154	Senile debility.....	592	21.6
XIII. EXTERNAL CAUSES.			
A. <i>Suicides.</i>			
155	Suicide by poison.....	188	6.8
156	Asphyxia.....	11	.4
157	Hanging or strangulation.....	53	1.9
158	Drowning.....	24	.8
159	Fire arms.....	103	3.7
160	Cutting instruments.....	17	.6
161	Jumping from high places.....	4	.1
162	Crushing.....	2	.07
163	Other suicides.....	2	.07
B. <i>Accidents.</i>			
164	Fractures.....	14	.5
165	Dislocation.....	1	.03
166a	Accidental gunshot wounds.....	74	2.7
166b	Injuries by machinery.....	41	1.5
166c	Injuries in mines and quarries.....	53	1.9
166d	Railroad accidents and injuries.....	435	15.9
166e	Injuries by horses and vehicles.....	125	4.5
166f	Other accidental traumatisms.....	533	19.5
167	Burns and scalds.....	187	6.8
168	Burns from corrosive substances.....	1	.03
169	Sunstroke.....	20	.7
170	Freezing.....	10	.3
171	Electric shock.....	48	1.7
172	Accidental drowning.....	157	5.7
173	Inanition (starvation).....	18	.6
174	Absorption of deleterious gases (nonsuicidal).....	23	.8
175	Other acute poisonings.....	90	3.2
176	Other external violence.....	200	7.3
C. <i>Homicides.</i>			
176a	Homicide.....	109	3.9
176b	Mob violence.....		
XIV. CAUSES ILL-DEFINED.			
177	Dropsy.....	9	.3
178	Sudden death.....	2	.07
179	Unspecified or ill-defined causes of death.....	104	3.8
XV. STILLBIRTHS.			
180	Stillbirths.....	2,069	76.8
	All Causes.....	36,579	1,338.6

TABLE No. 2.

Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Condition, for the Year Ending December 31, 1909. International Classification.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
I. GENERAL DISEASES—EPIDEMICS.												
1. Typhoid fever.....	40	21	38	34	36	37	80	119	144	162	110	54
2. Exanthematus typhus.....												
3. Recurrent fever.....												
4. Intermittent and malarial fever.....	3	4	5	7	6	7	9	23	19	17	12	3
5. Variola or smallpox.....				1	1		2				1	
6. Measles.....	5	15	23	41	27	14	13	9	3		3	3
7. Scarletina.....	11	11	7	11	14	9	9	9	6	21	19	25
8. Whooping cough.....	20	45	53	44	46	26	33	42	20	17	13	19
9. Croup.....	6	3	1		1				1	4	3	4
10. Diphtheria.....	32	21	17	10	4	3	8	19	25	81	54	51
11. Influenza.....	54	77	126	135	42	9	9	4	7	4	10	27
12. Miliary fever.....												
13. Asiatic cholera.....			2			2	9	8	3		1	
14. Cholera nostras.....			4	1	5	26	63	83	57	20	8	4
15. Dysentery.....	4	10	4									
16. Bubonic plague.....												
17. Yellow fever.....												
18. Leprosy.....												
19. Erysipelas.....	9	7	8	18	9	7	2	2	7	7	9	8
20. Other epidemic diseases.....	1	1	1	1	1		1	1	3	1	1	
21. Purulent septicaemia and infection.....	2	5	4	10	12	3	6	8	3	5		3
22. Glanders and farcy.....												
23. Malignant pustule and anthrax.....												
24. Rabies.....	1	1	1		1						1	
25. Actinomyces trichocoma, etc.....	2											

35. Pellets.....	3	9	9	5	6	5	4	2	6	1	7
36. Tuberculosis of the larynx.....	331	301	376	360	341	325	272	251	266	252	280
37. Tuberculosis of the lungs.....	17	22	24	31	25	21	21	10	8	14	14
38. Tuberculosis of the sinuses.....	23	21	21	31	24	36	28	30	27	20	17
39. Abdominal tuberculosis.....											
40. Pott's disease.....	1	1	4	1	1	2	1	3	1	1	1
41. Cold abscess.....											
42. White swelling.....	2	4	2	1	2	4		5	2	3	2
43. Tuberculosis of other organs.....	6	7	7	9	8	1	10	7	7	3	4
44. General tuberculosis.....		8	8	11	11	16	11	14	10	11	7
45. Scrofula.....	23	7	11	8	6	8	13	12	13	19	18
46. Syphilis.....											
47. Soft chancre.....											
48. Gonorrhea (5 years and over).....	2			1				1		1	1
49. Gonorrhea (under 5 years).....				1						1	
50. Cancer and other malignant tumors of the buccal cavity.....	5	2	9	5	6	4	4	8	5	5	7
51. Cancer and other malignant tumors of the stomach and liver.....	47	60	61	59	72	55	54	77	58	53	68
52. Cancer and other malignant tumors of the peritoneum, intestines and rectum.....	19	19	10	10	16	16	19	13	24	14	8
53. Cancer and other malignant tumors of the female genital organs.....	28	20	25	19	16	19	32	28	23	28	21
54. Cancer and other malignant tumors of the breast.....	12	17	9	14	17	21	12	10	14	14	20
55. Cancer and other malignant tumors of the skin.....	14	16	15	14	18	16	17	10	11	11	10
56. Cancer and other malignant tumors of other organs.....	16	18	16	20	17	18	25	23	15	20	17
57. Other tumors.....	3	5	5	1	1	1	2	2	1	2	2
58. Acute articular rheumatism.....	10	6	10	9	18	9	7	2	5	7	6
59. Chronic rheumatism and gout.....	12	5	10	13	7	8	6	7	4	8	1
60. Scoury.....											
61. Diabetes.....	31	20	31	25	26	20	16	22	25	29	28
62. Exophthalmic goitre.....	2	4	4	3	4	4	4	4	3	2	5
63. Addison's disease.....	1	1	1	3	3	2	3	1	1	1	
64. Leukemia.....	2	3	3	1	2	2	2	5	4	5	1
65. Anemia, chlorosis.....											
66. Other general diseases.....	5	8	10	15	16	13	12	6	17	7	14
67. Alcoholism acute and chronic.....	5	5	5	2	1	1	1	1	3	1	1
68. Chronic lead poisoning.....	4	5	8	7	7	8	4	11	13	7	10
69. Other chronic poisonings (occupational).....				1		1		1		2	
70. Other chronic poisonings.....	2	2	1	6		2	2		1		
II. LOCAL DISEASES—DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.											
71. Encephalitis.....	1	6	6	6	1	6	4	2	3	4	1
72. Simple meningitis.....	13	17	21	24	16	20	15	20	12	16	14
73. Epidemic cerebro-spinal meningitis.....	3	15	9	6	12	6	15	8	11	6	3
74. Progressive locomotor ataxia.....	2	12	2	5	19	1	4	4	6	8	4
75. Other diseases of the spinal cord.....	13	15	14	14	13	11	6	19	11	12	15

TABLE No. 2—Continued.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
64. Congestion and hemorrhage of the brain.....	154	160	207	150	168	129	140	161	135	164	142	183
65. Softening of the brain.....	10	6	12	7	7	7	9	12	8	9	9	16
66. Presbyopia.....	25	15	26	22	23	19	13	19	23	25	37	27
67. General paralysis.....	13	20	15	14	20	17	12	14	23	8	12	14
68. Other forms of insanity.....	7	4	3	7	6	3	2	5	5	10	11	7
69. Epilepsy.....	14	16	11	21	13	14	11	9	9	9	9	14
70. Convulsions (non-puerperal; 5 years and over).....												
71. Convulsions (under 5 years).....	12	9	10	10	6	3	6	7	7	1	3	7
72. Tetanus.....	3	4	5	5	9	5	16	10	2	9	3	4
73. Chorea.....		1		2	1		1	1	1	1	1	1
74. Other diseases of the brain.....	7	5	3	8	10	9	6	4	10	6	8	4
74.b Other diseases of the nervous system.....	3	5	6	5	3	3	1	1	4	5	1	2
75. Diseases of the eye and its adnexa.....												
76. Diseases of the ear.....	5	7	5	5	3	6	3	4	3	4	3	3
III. DISEASES OF THE CIRCULATORY SYSTEM.												
77. Pericarditis.....	5	6	3	1	1	4	3	1	2	8	3	4
78. Acute endocarditis.....	12	16	16	21	20	7	7	9	15	22	8	18
79. Organic diseases of the heart.....	336	268	341	268	328	274	272	251	224	310	263	273
80. Angina pectoris.....	21	18	28	21	21	15	16	11	18	23	23	21
81. Diseases of the arteries and atheroma, aneurism, etc.....	28	34	35	39	37	34	42	33	26	27	37	47
82. Embolism and thrombosis.....	3	12	7	6	18	6	8	3	3	5	6	11
83. Diseases of the veins, (varicos, hemorrhoids, phlebitis, etc.).....	2	3	2	3	4		2	1	1	2		
84. Diseases of the lymphatic system, (lymphangitis, etc.).....		2		2	3							
85. Hemorrhages.....	2	4	1	2	2	1	2	4	3	4		1
86. Other diseases of the circulatory system.....			1									4
IV. DISEASES OF THE RESPIRATORY SYSTEM.												
87. Diseases of nasal fossae.....												
88. Diseases of the larynx.....	6	3	5	3	4		1	2	3	5	4	1
89. Diseases of the thyroid body.....	1			2	1				1			7
90. Acute bronchitis.....	24	47	61	40	13	6	8	10	9	18	14	19
91. Chronic bronchitis.....	23	19	29	39	20	16	12	35	12	22	20	35

92. Broncho-pneumonia.	138	191	124	59	22	15	21	26	28	45	58
93. Pneumonia.	166	305	312	131	41	23	31	49	92	123	196
94. Pleurisy.	9	10	3	3	4	3	3	2	5	6	2
95. Congestion and apoplexy of the lungs.	4	3	13	7	1	4	1	4	5	6	7
96. Gangrene of the lungs.	1	3	.....	.....	1	.....	1	.....	1	.....	.....
97. Asthma.	8	12	11	10	4	5	4	8	9	3	9
98. Pulmonary emphysema.	1	1	2	1	2	1	1	1	.....	.....	.....
99. Other diseases of the respiratory system (phtisic excepted).	1	2	1	.....	2	2	3	4	.....	3	1
V. DISEASES OF THE DIGESTIVE SYSTEM.											
100. Diseases of the mouth and pharynx.	2	7	.....	2	1	1	.....	2	3	3	3
101. Diseases of the pharynx.	2	5	3	2	2	2	3	4	3	3	11
102. Diseases of the esophagus.	10	4	11	8	5	3	7	6	8	5	8
103. Ulcer of the stomach.	47	23	64	47	53	41	60	52	45	30	42
104. Other diseases of the stomach (cancer excepted).	33	43	55	38	45	165	437	295	146	49	53
105. Diarrhoea and enteritis (under 2 years).	1	3	2	1	1	.....	4	9	.....	1	.....
106. Chronic diarrhoea (under 2 years).	30	23	37	22	46	.....	105	76	34	35	27
107. Diarrhoea and enteritis 2 years and over.	.....	1	.....	.....	.....	.....	1	.....	1	.....	.....
108. Intestinal parasites.	32	26	40	21	23	22	23	27	31	22	28
109. Hernia and intestinal obstruction.	15	9	6	7	4	5	13	6	7	2	8
110. Other diseases of the intestines.	.....	1	3	1	2	.....	.....	1	.....	.....	1
111. Acute yellow atrophy of the liver.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
112. Hydatid tumors of the liver.	30	25	23	30	26	23	21	19	17	19	31
113. Cirrhosis of the liver.	6	4	6	8	14	11	4	11	9	4	13
114. Biliary calculi.	16	22	17	15	19	23	10	20	18	13	11
115. Other diseases of the liver.	.....	1	1	1	.....	.....	.....	1	.....	.....	1
116. Diseases of the spleen.	5	11	6	11	17	11	10	6	11	8	9
117. Simple peritonitis (non-puerperal).	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
118. Other peritonitis of the digestive system (cancer and tuberculous excepted).	1	1	2	2	3	.....	4	.....	1	13	28
119. Appendicitis and abscess of the iliac fossae.	15	33	26	22	19	23	19	15	25	.....	.....
VI. DISEASES OF THE GENITO-URINARY SYSTEM.											
119. Acute Nephritis.	21	26	26	25	23	28	12	32	24	19	20
120. Bright's disease.	144	105	148	146	132	114	152	107	137	143	147
121. Other diseases of the kidneys and their adnexa.	3	9	8	6	4	2	6	3	7	4	6
122. Calculi of the urinary tract.	1	3	2	1	1	1	1	2	1	1	.....
123. Diseases of the bladder.	15	15	9	15	9	6	13	12	13	16	13
124. Diseases of the urethra, urinary abscess, etc.	.....	1	3	3	1	.....	1	1	2	1	.....
125. Diseases of the prostate.	9	6	6	6	10	5	8	5	5	11	7
126. Non-venereal diseases of the male genital organs.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
127. N tritis.	2	.....	1	1	1	1	.....	.....	1	1	2
128. Uterine hemorrhage (non-puerperal).	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1

TABLE No. 2—Continued.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
129. Uterine tumor (non-cancerous).....	4	3	2	6	1	3	3	2	2	6	5	3
130. Other diseases of the uterus.....	1	3	2	3	2	2	1	1	2	3	1	3
131. Cysts and other tumors of the ovary.....	4	5	3	2	2	1	3	4	2	3	3	3
132. Other diseases of the female genital organs.....	1	3	2	7	3	8	3	3	2	5	8	6
133. Non-puerperal diseases of the breast (cancer excepted).....												
VII. PUERPERAL DISEASES.												
134. Accidents of pregnancy.....	3	1	6	7	5	8	4	6	2	6	4	8
135. Puerperal hemorrhage.....	1	1	1		1	1	1			1		2
136. Other accidents of labor.....	3	3	1	3	1			1	2	1	2	2
137. Puerperal septicemia.....	21	13	21	15	18	18	12	6	14	11	13	12
138. Puerperal albuminuria and convulsions.....	5	4	5	9	7	6	7		3	3	3	4
139. Phlegmasia, alba dolens (puerperal).....									1			
140. Other puerperal accidents—sudden deaths.....	5		2	1	2	2	2	4	3	2	7	6
141. Puerperal diseases of the breast.....												
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.												
142. Gangrene.....	6	8	11	11	5	11	13	7	8	10	6	10
143. Carbuncle.....	1	1	1		1	2	1	1	2		1	1
144. Acute abscess, phlegmon.....	1	2	2	1	1	1	1					
145. Other diseases of the skin and its adnexa.....	3	1	1	1		1	1	1	1	3	2	5
IX. DISEASES OF THE LOCOMOTOR SYSTEM.												
146. Non-tuberculous diseases of the bones.....												
147. Arthritis and other diseases of the joints (tuberculous and rheumatism excepted).....	4	3	4	7	10	4	5	5	5	5	11	3
148. Amputation.....					1			1				
149. Other diseases of the organs of locomotion.....												
X. MALFORMATIONS.												
150. Malformations.....	42	33	46	34	30	31	34	42	36	36	24	45

XI. DISEASES OF INFANCY.

151. Congenital debility, icterus, sclerema.....	116	102	127	106	103	100	129	133	85	91	100	123
152. Other diseases peculiar to early infancy.....	8	5	7	10	7	6	11	8	5	7	8	5
153. Lack of care.....	3	4	6	3	7		3	7	7	4	1	3

XII. DISEASES OF OLD AGE.

154. Senile debility.....	31	34	37	42	47	49	59	65	54	67	49	53
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XIII. EXTERNAL CAUSES.

A.—Suicides.

155. Suicide by poisoning.....	16	12	17	9	19	11	18	23	13	20	14	16
156. Asphyxia.....	2	1	2		2					1		2
157. Hanging or strangulation.....	6	4	3	4	4	5	6	5	3	1	7	3
158. Drowning.....							7	5	1	3	2	5
159. Firearms.....	7	6	7	15	7	8	10	9	6	16	7	
160. Cutting instruments.....	3		3		2	2	2		3	1	1	
161. Jumping from high places.....	2				1	1						
162. Crushing.....			1									
163. Other suicides.....						1			1		1	

B.—Accidents.

164. Fractures.....	1		1	1	1	2	2		2	2	3	
165. Dislocations.....	7	4	5	4	5	4	9	5	8	5	10	8
166a. Accidental gunshot wounds.....	7	3	4	3	2	1	1	2	5	3	5	5
166b. Injuries by machinery.....	3	6	9	5	3	5	1	2	6	3	6	4
166c. Injuries in mines and quarries.....												
166d. Railroad accidents and injuries.....	31	25	36	30	29	47	26	54	46	37	36	38
166e. Injuries by horses and vehicles.....	6	6	14	8	11	11	13	21	14	10	5	7
166f. Other accidental traumatism.....	32	37	47	49	43	29	45	53	44	56	43	50
167. Burns and scalds.....	19	25	14	21	14	6	7	15	12	19	10	26
168. Burns from corrosive substances.....												1
169. Sunstroke.....						6	6	8				
170. Freezing.....	3	2	1									
171. Electric shock.....			2	7	1	8	11	9	4	1	3	4
172. Accidental drowning.....	3	4	8	9	13	36	36	26	7	3	5	7
173. Inanition (starvation).....	1	2	2	2	1	1	3	4	2	1		
174. Absorption of deleterious gases (non-suicidal).....	2	1		1	6	1	8	1	1	2	3	4
175. Other acute poisonings.....	10	5	11	4	9	10	7	10	5	2	6	3
176. Other external violence.....	30	22	19	15	9	7	16	9	15	13	16	26

TABLE No. 2—Continued.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
<i>C.—Homicides.</i>												
176a. Homicide.....	8	14	8	8	13	7	3	7	7	15	12	7
176b. Mob violence.....												
XIV. CAUSES ILL-DETERMINED.												
177. Dropsy.....	1			3	1		1		4			1
178. Sudden death.....					8	5	10	10	5	10	14	11
179. Unspecified or ill-defined causes of death.....	6	8	8	9	8							
XV. STILLBIRTHS.												
180. Stillbirths.....	174	157	139	133	131	175	153	156	153	169	166	209
Grand total	2,979	2,930	3,636	3,335	2,939	2,631	3,163	3,326	2,837	3,006	2,663	2,990

TABLE No. 2—Continued.

Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Condition, for the Year Ending December 31, 1909. International Classification.

	0	1	2	3	4	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
I. GENERAL DISEASES—EPIDEMIC.																		
1. Typhoid fever.....	9	10	15	10	11	64	82	141	102	90	74	55	37	36	34	32	24	20
2. Exanthematus typhus.....																		
3. Recurrent fever.....	15	7	9	2		9	2	7	5	3	3	4	4	3	3	5	3	6
4. Intermittent and malarial fever.....	1							1		2								
5. Variola or smallpox.....																		
6. Measles.....	27	39	19	9	7	20	9	2	5	6	2	2	5	2	2			
7. Scarlatina.....	9	22	15	20	15	53	11	3	1		1	1						
8. Whooping cough.....	214	92	34	20	6	10		1										
9. Croup.....	6	3	6	3	2	3												
9a. Diphtheria.....	15	28	46	43	38	114	28	7	5			1						
10. Influenza.....	48	11	5	4	2	2	9	7	6	9		9	10	8	14	35	29	46
11. Miliary fever.....																		
12. Asiatic cholera.....			3							1	1						2	2
13. Cholera nostras.....						2				4	4	3	9	3	8	8	20	34
14. Dysentery.....			14	3		1	2	1	1									
15. Bubonic plague.....																		
16. Yellow fever.....																		
17. Leprosy.....																		
18. Erysipelas.....	15	5	1	1	1	3	2	1	1	2	2	4	4	6	5	4	5	8
19. Other epidemic diseases.....	2	1																
20. Purulent septicemia and infection.....	6	1	1			3	2		1	4		4	2	4	5	3	5	7
21. Glanders and farcy.....																		
22. Malignant pustule and anthrax.....																		
23. Rabies.....					1													
24. Actinomyces, trichinosis, etc.....						1	2	2						2		1		

TABLE No. 2—Continued.

	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70
25. Pellets.....						1		2	9		7	1	7	6	3	5			
26. Tuberculosis of the larynx.....	48	30	14	8	5	29	64	327	590		498	360	318	271	180	160	177	188	
27. Tuberculosis of the lungs.....	72	35	17	11	9	24	10	14	17	8	6	6	3	4	3	1	2	2	
28. Tuberculosis of the meninges.....	27	11	2	4	1	6	7	12	31		35	24	16	18	20	20	15	10	
29. Abdominal tuberculosis.....																			
30. Pott's disease.....			1	1		3		5	1	2			1	2	1	1	1		
31. Cold abscess.....																			
32. White swelling.....	1						2	2	2	2			1	2					
33. Tuberculosis of other organs.....	4	3	1		3		4	6	7	4	5	5	5	5	5	4	4	3	
34. General tuberculosis.....	27	8	1		1		6	5	16	13	7	5	5	3	6	7	4	3	1
35. Scrofula.....	1	1						1											
36. Syphilis.....	77	5	3		2		1	3	4	10	6	6	7	5	8	4	1	1	
37. Soft chancre.....																			
38. Gonorrhea (5 years and over).....									1			1	1			1	1		
39. Gonorrhea (under 5 years).....	3																		
40. Cancer and other malignant tumors of the buccal cavity.....								1					1	2	4	1	8	12	10
41. Cancer and other malignant tumors of the stomach and liver.....	4				1				2	4	7	18	22	47	93	81	112	121	
42. Cancer and other malignant tumors of the peritoneum, intestines and rectum.....					1		1	1	2	3	8	11	11	11	30	15	26	26	
43. Cancer and other malignant tumors of the female genital organs.....							2	1	7	14	21	31	31	33	41	41	29	27	
44. Cancer and other malignant tumors of the breast.....									1	2	4	7	19	22	26	22	19	13	
45. Cancer and other malignant tumors of the skin.....						1	1					1	1	3	6	8	16	12	19
46. Cancer and other malignant tumors of other organs.....	3			1	4		2	2	5	2	6	14	13	16	16	18	30	35	
47. Other tumors.....	2					7	8	9	6	2	2	3	3	1	1	5	3	3	
48. Acute articular rheumatism.....				1	1	1	1		1	3	2	5	7	7	6	6	5	4	
49. Chronic rheumatism and gout.....												3			4	7	9	14	
50. Gout.....	1	1																	1
51. Diabetes.....	2	2	1	2	6		9	13	8	5	8	17	16	18	18	18	23	40	
52. Exophthalmic goitre.....							1	1	2	1	2	7	4	5	3	7	2	1	2
53. Addison's disease.....												2	2	2	1	1	1	3	2
54. Leukemia.....				1	1	2	1	2	3	3	3	2	1	4	4		3	1	

II. LOCAL DISEASES—DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.															
54.	Anemia, chlorosis	8	1	1	2	1	3	4	5	5	9	6	8	11	17
55.	Other general diseases	4	1	3	8	20	7	9	9	6	12	11	12	7	9
56.	Alcoholism, acute and chronic	4	1	3	8	16	9	3	2	2	1	1	1	1	1
57.	Chronic lead poisoning	58.	Other chronic poisonings (occupational).	59.	Other chronic poisonings	60.	Encephalitis	61.	Simple meningitis	62.	Epidemic cerebro-spinal meningitis	63.	Progressive locomotor ataxia	64.	Other diseases of the spinal cord
60.	Encephalitis	61.	Simple meningitis	62.	Epidemic cerebro-spinal meningitis	63.	Progressive locomotor ataxia	64.	Other diseases of the spinal cord	65.	Congestion and hemorrhage of the brain	66.	Softening of the brain	67.	Paralysis—cause unspecified
65.	Congestion and hemorrhage of the brain	66.	Softening of the brain	67.	Paralysis—cause unspecified	68.	General paralysis	69.	Epilepsy	70.	Convulsions (non-puerperal; 5 years and over)	71.	Convulsions (under 5 years)	72.	Tetanus
68.	General paralysis	69.	Epilepsy	70.	Convulsions (non-puerperal; 5 years and over)	71.	Convulsions (under 5 years)	72.	Tetanus	73.	Chorea	74a.	Other diseases of the brain	74b.	Other diseases of the nervous system
70.	Convulsions (non-puerperal; 5 years and over)	71.	Convulsions (under 5 years)	72.	Tetanus	73.	Chorea	74a.	Other diseases of the brain	74b.	Other diseases of the nervous system	75.	Diseases of the eye and adnexa	76.	Diseases of the ear
73.	Chorea	74a.	Other diseases of the brain	74b.	Other diseases of the nervous system	75.	Diseases of the eye and adnexa	76.	Diseases of the ear	77.	Pericarditis	78.	Acute endocarditis	79.	Organic diseases of the heart
76.	Diseases of the ear	77.	Pericarditis	78.	Acute endocarditis	79.	Organic diseases of the heart	80.	Antritis pectoris	81.	Diseases of the arteries and atheroma, aneurism, etc.	82.	Embolism and thrombosis	83.	Diseases of the veins, (varices, hemorrhoids, phlebitis, etc.)
80.	Antritis pectoris	81.	Diseases of the arteries and atheroma, aneurism, etc.	82.	Embolism and thrombosis	83.	Diseases of the veins, (varices, hemorrhoids, phlebitis, etc.)	84.	Diseases of the lymphatic system, (lymphangitis, etc.)	85.	Hemorrhages	86.	Other diseases of the circulatory system	87.	Other diseases of the circulatory system
81.	Diseases of the arteries and atheroma, aneurism, etc.	82.	Embolism and thrombosis	83.	Diseases of the veins, (varices, hemorrhoids, phlebitis, etc.)	84.	Diseases of the lymphatic system, (lymphangitis, etc.)	85.	Hemorrhages	86.	Other diseases of the circulatory system	87.	Other diseases of the circulatory system	88.	Other diseases of the circulatory system
84.	Diseases of the lymphatic system, (lymphangitis, etc.)	85.	Hemorrhages	86.	Other diseases of the circulatory system	87.	Other diseases of the circulatory system	88.	Other diseases of the circulatory system	89.	Other diseases of the circulatory system	90.	Other diseases of the circulatory system	91.	Other diseases of the circulatory system
87.	Other diseases of the circulatory system	88.	Other diseases of the circulatory system	89.	Other diseases of the circulatory system	90.	Other diseases of the circulatory system	91.	Other diseases of the circulatory system	92.	Other diseases of the circulatory system	93.	Other diseases of the circulatory system	94.	Other diseases of the circulatory system
90.	Other diseases of the circulatory system	91.	Other diseases of the circulatory system	92.	Other diseases of the circulatory system	93.	Other diseases of the circulatory system	94.	Other diseases of the circulatory system	95.	Other diseases of the circulatory system	96.	Other diseases of the circulatory system	97.	Other diseases of the circulatory system
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165.	Other diseases of the circulatory system	166.	Other diseases of the circulatory system	167.	Other diseases of the circulatory system	168.	Other diseases of the circulatory system	169.	Other diseases of the circulatory system	170.	Other diseases of the circulatory system	171.	Other diseases of the circulatory system	172.	Other diseases of the circulatory system
168.	Other diseases of the circulatory system	169.	Other diseases of the circulatory system	170.	Other diseases of the circulatory system	171.	Other diseases of the circulatory system	172.	Other diseases of the circulatory system	173.	Other diseases of the circulatory system	174.	Other diseases of the circulatory system	175.	Other diseases of the circulatory system
171.	Other diseases of the circulatory system	172.	Other diseases of the circulatory system	173.	Other diseases of the circulatory system	174.	Other diseases of the circulatory system	175.	Other diseases of the circulatory system	176.	Other diseases of the circulatory system	177.	Other diseases of the circulatory system	178.	Other diseases of the circulatory system
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276.	Other diseases of the circulatory system	277.	Other diseases of the circulatory system	278.	Other diseases of the circulatory system	279.	Other diseases of the circulatory system	280.	Other diseases of the circulatory system	281.	Other diseases of the circulatory system	282.	Other diseases of the circulatory system	283	

III. DISEASES OF THE CIRCULATORY SYSTEM.

77.	Pericarditis.	82.	Embolism and thrombosis.
78.	Acute endocarditis.	83.	Diseases of the veins (varices, hemorrhoids, phlebitis etc.)
79.	Organic diseases of the heart.	84.	Diseases of the lymphatic system, (lymphangitis etc.)
80.	Insane persons.	85.	Hemorrhages.
81.	Diseases of the arteries and atheroma, aneurism, etc.	86.	Other diseases of the circulatory system.

TABLE No. 2—Continued.

	0	1	2	3	4	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
IV. DISEASES OF THE RESPIRATORY SYSTEM.																		
87. Diseases of the nasal fossae.....	1	2	6	10	1	5	1	1			1	1	1		1			
88. Diseases of the larynx.....	12	21	8	2	4	2	1	2	2	2	1	1	2	2	1	1	1	2
89. Diseases of the thyroid body.....	151	9	8	2	1	1	2	1			2	7	4	7	8	17	25	7
90. Acute bronchitis.....																		
91. Chronic bronchitis.....																		
92. Broncho-pneumonia.....	400	110	46	15	8	26	5	6	7	4	6	5	4	7	11	19	14	45
93. Pneumonia.....	368	96	57	26	10	39	29	47	46	45	64	61	64	50	74	89	99	117
94. Pleurisy.....	1	1	1	1	1	4	1	2	2	1	5	2	1	2	5	7	4	2
95. Congestion and apoplexy of the lungs.....	19	3	2		2		2	2	2	2	1	1	1	3	2	2	1	1
96. Gangrene of the lungs.....																		
97. Asthma.....	1	2	1			1	1	2	1	1	1	2	1	2	1	5	4	13
98. Pulmonary emphysema.....								1	1	1					2		1	1
99. Other diseases of the respiratory system (phtisis excepted).....						1			3		1		1	2				1
V. DISEASES OF THE DIGESTIVE SYSTEM.																		
100. Diseases of the mouth and sinuses.....	11	2	1	1	5	1	1	5	2	2	3	1	2	3	1			1
101. Diseases of the pharynx.....	9	3	2	1	5	6	1	1										2
102. Diseases of the esophagus.....			1		1				1	2	5	4	6	7	10	10	11	8
103. Ulcer of the stomach.....								7	7	8	8	11	13	20	22	25	27	30
104. Other diseases of the stomach (cancer excepted).....	155	25	10	8		6	4											
105. Diarrhoea and enteritis (under 2 years).....	1,322	496																
106. Chronic diarrhoea (under 2 years).....	18	5																
107. Diarrhoea and enteritis (2 years and over).....			108	22	18	16	5	4	7	6	9	8	11	14	19	11	20	63
108. Intestinal parasites.....					1	2	12	8	11	15	14	17	9	19	23	30	19	25
109. Hernia and intestinal obstruction.....	42	11	7	2	1	6	1											
110. Other diseases of the intestines.....	13	4	2	2	1	5	1	1	1	4	5	2	1	4	3	4	3	9
111. Acute yellow atrophy of the liver.....																		
112. Fibroid tumors of the liver.....																		
113. Cancer of the liver.....	1	1		1		3		2	5	1	5	20	14	20	29	31	45	29
114. Biliary calculi.....																		
115. Biliary calculi.....																		

114. Other diseases of the liver.....	10	2	2	2	1	6	1	4	6	3	6	9	12	20	25	20	21
115. Diseases of the spleen.....	6	4			1	6	7	12	6	13	7	8	7	3	9	8	6
116. Simple peritonitis (non-puerperal).....																	
117. Other diseases of the digestive system (cancer and tuberculosis excepted).....						1			2		1	1	1	2	2	2	3
118. Appendicitis and abscess of the ilio cecum.....	2	2		2	4	27	40	39	34	26	25	16	11	9	8	21	8
VI. DISEASES OF THE GENITO-URINARY SYSTEM.																	
119. Acute orchitis.....	14	12	12	3	3	11	1	8	9	12	18	12	7	17	18	20	22
120. Bright's disease.....	5	4	2	1		3	10	15	19	32	39	57	83	110	132	153	235
121. Other diseases of the kidneys and their adnexa.....	5	1				2		1	3		5	6	5	4	2	7	6
122. Calculi of the urinary tract.....								1	1	2	1	1	2		4	4	3
123. Diseases of the bladder.....	7					3			1	2	3	2	1	2	2	5	12
124. Diseases of the urethra, urinary abscess, etc.....											1	1	1		4		2
125. Diseases of the prostate.....												1	1	2	3	6	5
126. Non-venereal diseases of the male genital organs.....	1	1												1	1		
127. Nephritis.....											1	1					
128. Uterine hemorrhage (non-puerperal).....								1	1								
129. Uterine tumor (non-cancerous).....									1	2	7	9	5	2		5	1
130. Other diseases of the uterus.....									5	5	4	5	3	2	1	2	
131. Cysts and other diseases of the ovary.....								1	5	2	4	1	1	5	2	1	4
132. Other diseases of the female genital organs.....								4	7	11	7	7	6				
133. Non-puerperal diseases of the breast (cancer excepted).....																	
VII. PUERPERAL DISEASES.																	
134. Accidents of pregnancy.....								3	10	13	16	9	6	2	1		
135. Puerperal hemorrhage.....								2	2	2	1	4					
136. Other accidents of labor.....								1	6	4	4	4	1		4	4	
137. Puerperal septicemia.....								1	11	44	46	36	24	9			
138. Puerperal albuminuria and convulsions.....								1	7	13	8	12	11	4			
139. Phlegmasia, alba dolens (puerperal).....									1	1							
140. Other puerperal accidents—sudden death.....								1	14	4	3	8	6				
141. Puerperal diseases of the breast.....																	
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.																	
142. Gangrene.....		1			1								1	2	4	10	9
143. Carbuncle.....														1	1	3	2
144. Acute abscess, phlegmon.....	2								1	1		2		1	1	1	
145. Other diseases of the skin and its adnexa.....	10	2								1						2	

TABLE No. 2—Continued.

	0	1	2	3	4	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
IX. DISEASES OF THE LOCOMOTOR SYSTEM																		
146. Non-tuberculous diseases of the bones.....	12	4	1	3	4	7	3	5	1	3	3	4	2	2	3	.....	2	2
147. Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted).....										1								1
148. Amputation.....																		.....
149. Other diseases of the organs of locomotion.....																		.....
X. MALFORMATIONS.																		
150. Malformations.....	417	7	3	.....	1	3	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
XI. DISEASES OF INFANCY.																		
151. Congenital debility, icterus, scelerema.....	1,311	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
152. Other diseases peculiar to early infancy.....	87	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
153. Lack of care.....	52	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
XII. DISEASES OF OLD AGE.																		
154. Senile debility.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
XIII. EXTERNAL CAUSES.																		
<i>A.—Suicide.</i>																		
155. Suicide by poisoning.....	.....	.....	.....	.....	.....	.....	4	18	25	29	8	13	17	20	14	18	5	12
156. Asphyxia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
157. Hanging or strangulation.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
158. Drowning.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
159. Firearms.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
160. Cutting instruments.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
161. Jumping from high places.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
162. Crashing.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
163. Other suicides.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE No. 2—Continued.

Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Condition, for the Year Ending December 31, 1909. International Classification.

GENERAL DISEASES—ENDMIC.									
	70 to 74	75 to 79	80 to 84	85 to 89	90 and over.	Unknown.	White.	Colored.	American.
									Foreign.
									Not Reported.
									Single.
									Married.
									Widowed.
									Not Reported.
									Total.
1. Typhoid fever.....	9	8	10			2	847	28	833
2. Exanthematic typhus.....									
3. Recurrent fever.....									
4. Intermitent and malarial fever.....	8	5	12				111	4	104
5. Varicella or smallpox.....	1						5		5
6. Measles.....							184	2	183
7. Scarlatina.....							151		150
8. Whooping cough.....							359	19	378
9. Croup.....							23		23
9a. Diphtheria.....							319	6	325
10. Influenza.....	52	80	103	15			403	11	434
11. Military fever.....									
12. Asiatic cholera.....							23		23
13. Cholera nostras.....	4	5	2				251		254
14. Dysentery.....	23	57	66	18	1			4	30
15. Bubonic plague.....									
16. Yellow fever.....									
17. Leucocy.....									
18. Erysipelas.....	10	4	10				92	1	80
19. Other epidemic diseases.....		1					5		5
20. Purulent septicaemia and infection.....							61		53
21. Glanders and farcy.....	3	3	7						3
22. Malignant pustule and anthrax.....									
23. Rabies.....							7		7
24. Actinomycosis, trichinosis, etc.....							3		3

25. Pellets.....	1	2	2	1	63	1	19	32	12	1	63
26. Tuberculosis of the larynx.....	110	99	46	2	3,400	243	3,423	1,847	456	19	3,643
27. Tuberculosis of the lungs.....	12	9	3	1	219	11	227	204	24	2	230
28. Tuberculosis of the meninges.....					263	9	265	126	130	45	302
29. Abdominal tuberculosis.....											
30. Potts disease.....											
31. Cold abscess.....				1	19	2	21	16	3	2	21
32. White swelling.....					1	1	2	1	1	2	3
33. Tuberculosis of other organs.....	2	2	2		27		26	14	8	4	27
34. General tuberculosis.....	1		1		74	2	72	32	34	10	76
					107	8	113	73	36	6	115
35. Scrofula.....											
36. Syphilis.....					2	1	3	3	35	9	3
36a. Soft chancre.....	1	3			136	11	140	102		1	147
37. Gonorrhea (5 years and over).....					4	1	5	4	1		5
38. Gonorrhea (under 5 years).....					3		3	3			3
39. Cancer and other malignant tumors of the buccal cavity.....	9	9	7		65		56	8	36	19	65
40. Cancer and other malignant tumors of the stomach and liver.....	116	74	31	5	731	8	587	148	452	227	739
41. Cancer and other malignant tumors of the peritoneum, intestines and rectum.....	27	12	10		178	6	153	24	21	117	184
42. Cancer and other malignant tumors of the female genital organs.....	12	13	4		268	13	258	20	18	179	281
43. Cancer and other malignant tumors of the breast.....	14	10	10		165	6	160	11	18	102	171
44. Cancer and other malignant tumors of the skin.....	18	31	43	4	164	1	140	22	3	84	165
45. Cancer and other malignant tumors of other organs.....	19	21	15		218	5	194	27	34	140	223
46. Other tumors.....	1	2	3		20		17	3	6	14	20
47. Acute articular rheumatism.....	5	5	9		94	2	91	4	1	37	96
48. Chronic rheumatism and gout.....	10	15	11		87		74	12	1	48	87
49. Scurvy.....					3		3				3
50. Diabetes.....	31	27	10	2	287	4	258	32	1	154	291
51. Exophthalmic goitre.....			1		39		37	2	10	24	39
52. Addison's disease.....	1				17		17	2	13	2	17
53. Leukemia.....					34		32	2	11	20	34
54. Anemia, chlorosis.....	8	12	8	1	126		114	12	36	60	126
55. Other general diseases.....	2	2	2		12	2	12	2	9	2	14
56. Alcoholism, acute and chronic.....	2	1		1	88	2	81	7	33	27	90
57. Chronic lead poisoning.....					3		3		2	1	3
58. Other chronic poisonings (occupational).....					2		2		2		2
59. Other chronic poisonings.....	3	2	2		16		16		3	5	16

TABLE No. 2—Continued.

	70 to 75	75 to 80	80 to 90	90 to and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
II. LOCAL DISEASES—DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.															
60. Encephalitis.....	1	3	1	1	1	41	..	39	1	1	27	10	4	..	41
61. Simple meningitis.....	3	3	..	..	..	191	5	186	8	2	161	27	8	..	196
61a. Epidemic cerebro-spinal meningitis.....	..	..	..	..	..	109	1	109	1	..	93	15	2	..	110
62. Progressive locomotor ataxia.....	4	3	4	1	..	52	..	46	6	..	4	35	13	..	52
63. Other diseases of the spinal cord.....	24	17	7	2	..	148	3	135	15	1	40	78	31	2	151
64. Congestion and hemorrhage of the brain.....	311	287	275	28	5	1,891	41	1,656	288	18	216	989	730	17	1,932
65. Softening of the brain.....	14	29	21	2	..	115	..	99	16	..	9	50	56	..	115
66. Paralysis—cause unspecified.....	51	49	71	6	..	283	3	250	35	1	30	127	127	2	286
67. General paralysis.....	22	24	20	4	..	176	6	162	16	4	27	101	52	2	182
68. Other forms of insanity.....	4	5	4	..	..	67	3	61	3	6	19	36	13	2	70
69. Epilepsy.....	7	6	3	1	..	145	5	140	3	7	87	34	27	2	150
70. Convulsions (non-puerperal; 5 years and over).....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
71. Convulsion (under 5 years).....	..	1	..	..	..	78	3	81	1	..	81	..	..	1	81
72. Tetanus.....	..	..	..	..	..	72	3	70	5	..	64	18	2	1	75
73. Chorea.....	..	..	..	..	..	10	..	10	..	..	6	4	..	..	10
74a. Other diseases of the brain.....	2	5	1	..	..	79	1	71	6	3	32	38	10	..	80
74b. Other diseases of the nervous system.....	3	4	5	..	..	38	1	34	5	8	19	11	11	1	39
75. Diseases of the eye and its adnexa.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
76. Diseases of the ear.....	1	1	2	..	1	51	..	48	2	1	40	9	2	..	51
III. DISEASES OF THE CIRCULATORY SYSTEM.															
77. Pericarditis.....	4	3	5	1	..	27	4	27	11	3	7	19	13	2	41
78. Acute endocarditis.....	17	16	21	..	..	184	..	141	26	4	49	70	57	2	173
79. Organic diseases of the heart.....	519	486	431	46	6	3,312	116	2,690	483	53	423	1,774	1,194	35	3,493
80. Angina pectoris.....	37	30	26	2	1	323	..	290	30	2	9	162	63	2	238
81. Diseases of the arteries and atheroma, aneurism, etc.....	65	84	110	19	1	408	11	332	84	3	26	184	209	..	419
82. Embolism and thrombosis.....	9	9	4	..	..	83	..	75	6	2	7	49	27	..	83
83. Diseases of the veins (varices, hemorrhoids, phlebosis, etc.).....	4	2	..	..	..	18	2	18	2	..	1	13	6	..	20
84. Diseases of the lymphatic system, (lymphangitis, etc.).....	..	..	..	..	..	8	..	8	..	..	5	1	2	..	8
85. Hæmorrhages.....	..	2	1	..	..	29	..	27	..	..	13	14	2	..	29
86. Other diseases of the circulatory system.....	2	..	1	..	..	1	..	..	1	..	..	1	..	..	3

IV. DISEASES OF THE RESPIRATORY SYSTEM.

87. Diseases of the nasal fossae.....	1	40	2	1	1	37	4	1	1	1	43
88. Diseases of the larynx.....	42	8	1	8	1	59	4	4	1	1	8
89. Diseases of the thyroid body.....	263	6	248	18	2	192	1	40	3	1	268
90. Acute bronchitis.....	255	7	200	58	4	30	95	184	3	202	
91. Chronic bronchitis.....											
92. Broncho-pneumonia.....	821	52	826	45	2	643	120	110	16	873	
93. Pneumonia.....	1,673	89	1,585	164	16	900	579	370	16	1,765	
94. Pleurisy.....	53	2	51	3	1	16	21	19	55	59	
95. Congestion and apoplexy of the lungs.....	58	1	50	9		28	15	13			
96. Gangrene of the lungs.....	6	1	7			2	4	1		7	
97. Asthma.....	87	1	62	25	1	9	40	38	1	88	
98. Pulmonary emphysema.....	9	1	9	1		2	3	5		10	
99. Other diseases of the respiratory system (pathiasis excepted).....	20		15	5		3	10	7		20	

V. DISEASES OF THE DIGESTIVE SYSTEM.

100. Diseases of the mouth and adnexa.....	1	1				16	1	2		19	
101. Diseases of the pharynx.....	2	4				35	13	8		56	
102. Diseases of the esophagus.....	7	10				3	3			6	
103. Ulcer of the stomach.....	81	2	73	7	1	10	55	17	1	83	
104. Other diseases of the stomach (cancer excepted).....	582	14	519	42	5	269	156	139	2	566	
105. Diarrhoea and enteritis (under 2 years).....	1,775	43	1,818			1,818				1,818	
106a. Chronic diarrhoea (under 2 years).....	52	23	23			22				23	
106. Diarrhoea and enteritis (2 years and over).....	548	15	548	54	3	218	176	166	3	533	
107. Intestinal parasites.....	3					18				3	
108. Hernia and intestinal obstruction.....	335	9	291	52	1	115	153	74	2	344	
109. Other diseases of the intestines.....	90	2	81	11		32	34	25	1	92	
110. Acute yellow atrophy of the liver.....	8	1	8	1		3	4	1	1	9	
111. Hydatid disease of the liver.....	277	5	238	44		45	167	69	1	282	
112. Carcinoma of the liver.....	100	2	88	14		9	61	32		102	
113. Biliary calculi.....											
114. Other diseases of the liver.....	203	3	186	20		38	112	53	3	206	
115. Diseases of the spleen.....	3	1	4			1	2			4	
116. Simple peritonitis (non-purulent).....	118	2	111	7	2	53	56	9	2	120	
117. Other diseases of the digestive system (cancer and tuberculosis excepted).....											
118. Appendicitis and abscess of the iliac fossae.....	12	11	11			4	5	3		12	
	267	2	263	5		160	98	11		269	

VI. DISEASES OF THE GENITO-URINARY SYSTEM.

119. Acute nephritis.....	25	15	23	1		86	127	64	4	281	
120. Bright's disease.....	245	193	202	21		1,352	898	530	17	1,616	
121. Other diseases of the kidneys and their adnexa.....	9	5	2	1		14	41	9	1	65	
122. Calculi of the urinary tract.....						3	10	2		15	
123. Diseases of the bladder.....	24	41	31	3		14	75	53		141	

TABLE No. 2—Continued.

	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
124. Diseases of the urethra, urinary abscess, etc.	21	16	25	4		9	9	7	2		3	4	2		9
125. Diseases of the prostate.						83	1	71	9	4	1	57	25	1	4
126. Non-venereal diseases of the male genital organs.						4	4	4			2	2			4
127. Netritis.		1				3	1	4			2	2			4
128. Uterine hemorrhage (non-puerperal).						3		3			2	1			3
129. Uterine tumor (non-cancerous).	1	1				34	5	37	2		4	28	7		39
130. Other diseases of the uterus.				1		22	1	23	1		3	16	4		23
131. Cysts and other tumors of the ovary.	4	2				33	1	30	4		5	19	10		34
132. Other diseases of the female genital organs.	1					44	2	44	2		8	34	4		46
133. Non-puerperal diseases of the breast (cancer excepted).															
VIII. PUERPERAL DISEASES.															
134. Accidents of pregnancy.						58	2	59	1		2	56	2		60
135. Puerperal hemorrhage.						9		8	1		2	7			9
136. Other accidents of labor.						19	1	16	4		2	19			20
137. Puerperal septicemia.						171	3	163	11		5	167	2		174
138. Puerperal albuminuria and convulsions.						56		53	3		3	52	1		56
139. Puerperal, alba dolens (puerperal).						1		1							1
140. Other puerperal accidents—sudden death.						36		34	2			36			36
141. Puerperal diseases of the breast.															
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.															
142. Gangrene.	16	19	31	7		105	1	86	17	3	9	34	60	3	105
143. Carbuncle.	1	2				12		11	1		1	7	4		12
144. Actinic abscess, phlegmon.						9		8	1		2	6			9
145. Other diseases of the skin and its appendages.	4					20		18	1	1	16	1	4		20
IX. DISEASES OF THE LOCOMOTOR SYSTEM.															
146. Non-tuberculous diseases of the bones.															
147. Arthritis and other diseases of the joints (tuberculous and rheumatism excepted).	2	2				64	1	63	2		41	19	5		65
148. Amputation.						2		2			1		1		2
149. Other diseases of the organs of locomotion.															

TABLE No. 2—Continued.

	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
<i>C.—Homicide.</i>															
176a. Homicide.....	2				2	95	14	91	7	11	36	52	10	11	109
176b. Mob violence.....															
<i>XIV. CAUSES ILL-DEFINED.</i>															
177. Dropsy.....	3	1	1			9		9			2	4	3		9
178. Sudden death.....			1			2		2				2			2
179. Unspecified or ill-defined causes of death.....	1	3	6	1	3	102	2	94	4	6	65	18	16	6	104
<i>XV. STILLBIRTHS.</i>															
180. Stillbirths.....*						2,022	77	2,099			2,099				2,099
Grand total.....	2,558	2,571	2,722	420	58	34,400	1,179	33,059	3,153	387	15,706	13,226	7,353	289	36,579

TABLE No. 2A.

*Recapitulation of Table No. 2—Classified Deaths by Months, Ages, Color, Nationality and Conjugal Condition,
Year 1909.*

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
I. General Diseases—Epidemic.....	812	817	980	1,001	872	782	828	919	840	908	787	771
II. Diseases of the nervous system and organs of sense.....	288	307	354	348	319	285	260	303	272	295	282	318
III. Diseases of the circulatory system.....	407	363	435	383	428	345	360	314	292	400	342	379
IV. Diseases of the respiratory system.....	380	484	684	550	224	100	83	102	119	196	223	324
V. Diseases of the digestive system.....	255	241	302	240	286	382	764	734	552	358	209	264
VI. Diseases of the genito-urinary system.....	205	178	209	222	189	167	200	205	168	205	208	208
VII. Puerperal diseases.....	38	23	36	35	34	35	37	17	25	24	29	34
VIII. Diseases of the skin and cellular tissues.....	11	12	15	13	7	15	16	9	11	13	9	16
IX. Diseases of the locomotor system.....	4	3	4	7	11	4	5	6	5	6	11	3
X. Malformations.....	42	33	46	34	30	31	34	42	36	36	24	45
XI. Diseases of infancy.....	127	111	140	119	117	109	146	148	97	102	109	129
XII. Diseases of old age.....	31	34	37	42	47	49	59	65	54	67	49	58
XIII. External causes.....	198	181	215	197	195	217	228	266	205	220	200	231
XIV. Causes ill-defined.....	7	8	12	8	9	5	11	10	9	10	10	13
XV. Stillbirths.....	174	157	189	183	181	175	158	186	152	169	166	209
Total.....	2,979	2,960	3,636	3,385	2,959	2,681	3,168	3,326	2,837	3,006	2,662	2,990

TABLE No. 2A—Continued.

	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70
I. General diseases—Epidemic.....	644	322	209	145	104	378	270	593	736	749	578	566	550	558	581	555	615	628	
II. Diseases of the nervous system and organs of sense.....	289	74	35	16	16	65	61	48	49	63	60	88	133	139	210	230	300	399	
III. Diseases of the circulatory system.....	47	10	8	6	6	29	43	53	51	66	88	117	149	166	243	239	451	590	
IV. Diseases of the respiratory system.....	962	235	121	54	27	80	39	60	63	56	70	175	81	72	109	131	145	215	
V. Diseases of the digestive system.....	1,602	555	133	40	34	85	72	82	86	82	92	102	94	126	169	154	166	215	
VI. Diseases of the genito-urinary system.....	32	18	14	4	3	18	11	31	46	68	90	104	98	112	141	165	202	290	
VII. Puerperal diseases.....							2	25	89	77	72	60	26	5	1	9	12	9	
VIII. Diseases of the skin and cellular tissues.....	12	3	1	3	4	7	3	5	2	4	3	2	2	3	3	9	12	3	
IX. Diseases of the locomotor system.....	417	7	3		1	3	1	1	1										
X. Malformations.....																			
XI. Diseases of infancy.....	1,450	4																	
XII. Diseases of old age.....																			
XIII. External causes.....	223	56	33	36	15	81	98	161	211	203	160	162	173	146	121	128	91	111	
XIV. Causes ill-defined.....	50	8	2	1	2				2	4	3	3		3	3	1	7	6	
XV. Stillbirths.....	2,099																		
Total.....	7,839	1,296	559	298	212	748	606	1,059	1,336	1,371	1,207	1,283	1,305	1,332	1,585	1,712	2,021	2,481	

TABLE No. 2A—Continued.

	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
I. General Diseases—Epidemic.	528	512	432	50	12	9,900	415	9,517	728	70	4,036	4,473	1,749	57	10,315
II. Diseases of the nervous system and organs of sense.	447	435	414	44	7	3,644	78	3,198	380	44	934	1,571	1,068	29	3,622
III. Diseases of the circulatory system.	658	612	592	71	8	4,294	142	3,712	657	67	533	2,287	1,575	41	4,436
IV. Diseases of the respiratory system.	226	278	307	52	2	3,298	161	3,102	330	27	1,763	927	747	22	3,459
V. Diseases of the digestive system.	226	225	217	29	1	4,473	104	4,296	266	15	2,555	1,095	611	16	4,577
VI. Diseases of the genito-urinary system.	330	274	284	31	...	2,278	86	2,017	316	31	318	1,314	709	23	2,364
VII. Puerperal diseases.	...	...	...	...	...	350	6	334	22	...	13	338	4	1	356
VIII. Diseases of the skin and cellular tissues.	21	21	31	7	...	146	1	123	20	4	28	48	68	3	147
IX. Diseases of the locomotor system.	2	2	...	...	...	66	1	65	2	...	42	19	6	...	67
X. Malformations.	...	...	...	...	...	428	5	433	...	...	433	...	...	...	433
XI. Diseases of infancy.	...	...	...	...	...	1,422	32	1,454	...	...	1,454	...	...	...	1,454
IXII. Diseases of old age.	35	116	319	107	...	582	10	455	134	3	33	137	412	10	592
XIII. External causes.	81	92	118	28	25	2,484	59	2,149	294	100	1,098	993	371	81	2,543
XIV. Causes ill-defined.	4	4	8	1	3	113	2	105	4	6	67	24	18	6	115
XV. Stillbirths.	...	...	...	...	...	2,022	77	2,099	...	...	2,099	...	...	...	2,099
Total.	2,558	2,571	2,722	420	58	35,400	1,179	33,059	3,153	367	15,706	13,226	7,358	289	36,579

TABLE NO. 3.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1909.

COUNTIES	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Adams.....	Total.....	27	22	33	28	21	18	15	23	3	16	15	7
	Male.....	10	12	18	12	12	9	10	10	15	15	8	1
	Female.....	17	10	15	16	9	9	5	13	17	12	7	6
Allen.....	Total.....	78	81	129	90	91	82	71	95	79	101	68	91
	Male.....	46	47	66	46	50	43	33	45	41	43	35	50
	Female.....	32	34	63	44	41	39	38	50	38	58	33	41
Bartholomew.....	Total.....	28	30	26	35	29	26	29	31	23	25	18	37
	Male.....	15	17	17	19	18	13	13	14	10	10	12	16
	Female.....	13	13	9	16	11	13	16	17	13	15	6	21
Benton.....	Total.....	12	10	12	8	7	4	9	10	7	7	8	8
	Male.....	5	5	6	5	2	2	4	4	1	2	4	4
	Female.....	7	5	6	3	5	2	5	6	6	5	4	4
Blackford.....	Total.....	17	9	18	23	15	13	16	20	26	16	9	14
	Male.....	4	5	11	10	8	8	8	10	17	8	6	12
	Female.....	13	4	7	12	7	5	8	10	9	8	3	2
Boone.....	Total.....	28	27	42	27	31	26	23	29	23	25	16	18
	Male.....	8	8	25	13	18	14	13	17	14	13	11	9
	Female.....	13	19	17	14	13	12	9	12	8	12	5	9
Brown.....	Total.....	14	9	11	15	14	9	6	3	3	5	7	5
	Male.....	7	3	7	6	5	5	3	1	3	4	6	1
	Female.....	7	6	4	9	9	4	3	2	.....	1	1	4
Carroll.....	Total.....	14	25	29	25	21	21	19	26	11	20	17	25
	Male.....	4	14	17	12	14	14	9	10	6	14	10	17
	Female.....	10	11	12	13	7	7	10	16	5	6	7	8
Cass.....	Total.....	45	36	60	72	62	31	38	50	37	37	46	45
	Male.....	20	22	40	41	29	21	27	23	17	19	28	37
	Female.....	25	13	20	31	33	10	11	27	20	18	18	18

Clark.....	Total.....	42	33	51	41	31	46	43	48	41	41	41	29
	Male.....	21	20	20	15	23	24	26	27	23	20	20	13
	Female.....	21	13	22	26	8	22	22	21	18	21	21	16
Clay.....	Total.....	24	35	33	33	38	28	90	46	38	25	25	34
	Male.....	12	24	17	11	13	18	28	23	21	14	15	18
	Female.....	12	11	16	22	25	10	33	23	17	11	10	16
Clinton.....	Total.....	24	34	41	36	33	18	34	38	30	20	19	37
	Male.....	14	15	19	17	17	12	16	16	15	11	6	21
	Female.....	10	19	22	19	16	6	18	17	15	9	13	16
Crawford.....	Total.....	12	14	18	11	12	11	15	14	15	15	23	14
	Male.....	6	8	8	6	8	9	9	7	9	9	13	5
	Female.....	6	6	10	5	4	2	6	7	6	6	10	9
Davies.....	Total.....	33	17	37	30	33	12	35	27	28	32	26	34
	Male.....	17	7	20	14	14	5	17	17	17	14	16	16
	Female.....	16	10	17	16	19	7	18	10	11	18	10	18
Dearborn.....	Total.....	23	22	26	30	27	17	25	27	11	20	27	24
	Male.....	15	12	16	17	20	9	10	16	2	10	15	11
	Female.....	8	10	10	13	7	8	15	11	9	10	12	13
Decatur.....	Total.....	23	24	25	33	22	24	20	31	22	21	16	17
	Male.....	11	13	8	19	12	13	12	16	12	7	8	7
	Female.....	12	11	17	14	10	11	8	15	10	14	8	10
DeKalb.....	Total.....	30	20	35	35	27	25	24	21	23	17	21	23
	Male.....	15	6	17	23	12	13	10	13	11	7	12	13
	Female.....	15	14	18	12	15	15	11	8	12	10	9	10
Delaware.....	Total.....	52	42	63	50	56	34	55	57	44	50	60	61
	Male.....	26	22	33	29	29	18	23	23	23	26	31	35
	Female.....	26	20	30	21	27	16	26	32	21	24	29	26
Dubois.....	Total.....	17	21	22	23	14	25	18	23	24	25	14	18
	Male.....	12	10	9	15	10	9	11	11	15	18	8	9
	Female.....	5	11	13	8	4	16	7	12	11	7	6	9
Elkhart.....	Total.....	41	43	69	57	50	41	53	49	48	71	56	42
	Male.....	19	36	33	27	29	22	30	23	26	39	29	20
	Female.....	22	17	36	30	21	19	22	26	23	32	27	22
Fayette.....	Total.....	16	20	21	16	20	13	12	18	12	10	8	10
	Male.....	8	11	11	9	13	5	7	14	6	3	6	3
	Female.....	8	9	10	7	7	8	5	4	6	7	3	7

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Floyd.....	Total.....	48	35	45	42	36	40	34	39	31	42	43	37
	Male.....	23	15	20	19	17	18	14	18	15	23	21	17
	Female.....	25	15	25	19	19	26	16	17	16	20	22	20
Fountain.....	Total.....	26	21	29	28	20	22	29	23	24	13	26	13
	Male.....	12	9	13	14	11	13	18	9	16	6	16	9
	Female.....	14	12	16	14	9	9	11	14	8	7	11	4
Franklin.....	Total.....	15	16	27	18	22	21	12	17	15	17	10	31
	Male.....	6	8	16	10	11	8	7	10	8	7	7	11
	Female.....	9	8	12	8	11	13	5	7	7	10	3	20
Fulton.....	Total.....	18	16	13	22	9	15	25	24	24	19	8	13
	Male.....	11	8	9	11	3	7	12	12	12	9	4	7
	Female.....	7	8	4	11	6	8	13	12	12	10	4	6
Gibson.....	Total.....	30	32	44	41	28	38	36	40	43	43	27	30
	Male.....	14	20	21	18	17	14	21	28	21	23	7	18
	Female.....	16	12	23	23	11	24	15	14	22	20	20	12
Grant.....	Total.....	81	55	64	71	67	60	64	63	60	60	52	73
	Male.....	34	23	33	47	49	37	32	37	27	33	30	61
	Female.....	27	22	30	24	18	23	32	26	23	27	22	23
Greene.....	Total.....	36	40	45	48	28	45	52	52	38	35	42	40
	Male.....	17	21	22	28	14	20	26	27	23	18	22	17
	Female.....	19	19	23	23	14	25	26	25	15	17	20	23
Hamilton.....	Total.....	35	36	33	30	20	19	32	31	17	38	26	39
	Male.....	20	18	16	13	12	13	12	18	13	20	12	24
	Female.....	15	18	17	17	8	6	17	13	4	18	14	15
Hancock.....	Total.....	24	27	48	23	23	21	17	15	27	22	9	18
	Male.....	11	17	27	12	14	14	11	6	14	9	5	10
	Female.....	13	10	21	9	9	7	6	9	13	13	4	8

Harrison.....	Total.....	18	19	37	22	17	26	28	33	21	20	23	24
Male.....	Male.....	12	9	17	12	7	15	13	16	12	9	8	8
Female.....	Female.....	6	10	20	10	10	10	13	17	9	13	14	16
Headricks.....	Total.....	17	36	20	28	24	21	29	37	24	22	20	16
Male.....	Male.....	8	17	16	19	10	10	13	20	13	11	9	7
Female.....	Female.....	9	19	4	9	14	11	16	17	11	11	11	9
Henry.....	Total.....	32	34	34	36	43	35	34	43	30	40	36	29
Male.....	Male.....	16	16	18	19	22	19	17	23	18	30	16	17
Female.....	Female.....	16	18	16	17	21	16	17	18	12	10	20	12
Howard.....	Total.....	46	24	41	42	34	30	39	41	29	40	32	46
Male.....	Male.....	24	14	27	24	15	16	21	22	15	24	21	23
Female.....	Female.....	22	10	14	18	18	14	18	19	14	16	13	13
Huntington.....	Total.....	26	30	38	43	31	23	34	38	34	31	25	17
Male.....	Male.....	15	16	14	23	23	13	12	12	12	15	14	5
Female.....	Female.....	11	14	24	18	8	10	22	21	22	16	11	12
Jackson.....	Total.....	19	25	30	36	22	33	35	35	22	27	20	39
Male.....	Male.....	9	16	14	17	12	16	18	19	8	13	8	16
Female.....	Female.....	10	9	16	19	10	17	17	16	14	14	12	23
Jasper.....	Total.....	15	18	18	10	6	9	12	8	10	11	9	17
Male.....	Male.....	12	10	7	8	5	7	7	5	4	7	5	10
Female.....	Female.....	3	8	11	2	1	2	5	3	6	4	4	7
Jay.....	Total.....	26	24	38	31	21	27	37	43	26	22	17	21
Male.....	Male.....	14	14	21	17	11	10	12	18	12	15	7	9
Female.....	Female.....	12	10	17	14	10	17	25	25	14	7	10	12
Jefferson.....	Total.....	29	21	38	37	20	25	35	21	24	17	33	22
Male.....	Male.....	14	13	17	14	15	13	17	9	15	8	11	15
Female.....	Female.....	15	8	21	23	5	12	18	12	9	9	22	7
Jennings.....	Total.....	24	19	23	26	15	16	18	20	14	12	17	14
Male.....	Male.....	15	5	7	14	10	8	8	8	10	5	5	7
Female.....	Female.....	9	14	16	12	5	8	10	12	4	7	12	7
Johnson.....	Total.....	24	27	19	26	14	18	25	21	17	26	23	24
Male.....	Male.....	10	17	14	12	6	8	17	15	9	17	5	10
Female.....	Female.....	14	10	5	14	8	10	8	6	8	9	18	14
Knox.....	Total.....	49	41	45	34	37	34	41	65	26	43	40	47
Male.....	Male.....	28	28	23	19	24	23	21	39	12	24	21	25
Female.....	Female.....	21	13	22	15	13	11	20	26	14	19	19	22

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Kosciusko.....	Total.....	37	27	35	33	29	27	18	35	33	32	17	20
	Male.....	21	16	15	17	18	13	9	19	19	18	12	10
	Female.....	16	11	20	16	11	15	9	16	16	14	5	10
Lagrange.....	Total.....	12	26	26	22	20	14	15	23	13	9	14	19
	Male.....	7	11	14	11	10	7	7	8	7	2	5	10
	Female.....	5	15	12	11	10	7	8	15	6	7	9	9
Lake.....	Total.....	75	94	103	94	85	77	98	109	103	105	75	104
	Male.....	42	57	64	60	55	45	63	67	66	63	44	69
	Female.....	33	37	39	34	30	32	36	52	37	42	31	35
Laporte.....	Total.....	63	59	58	57	51	47	36	49	51	50	35	50
	Male.....	41	32	36	28	26	31	24	37	29	30	24	33
	Female.....	21	27	22	29	25	16	12	12	22	20	11	18
Lawrence.....	Total.....	22	43	42	51	38	46	41	43	31	38	28	34
	Male.....	13	18	18	27	18	27	19	27	16	18	19	20
	Female.....	9	25	24	26	20	19	22	16	15	20	9	14
Madison.....	Total.....	74	79	92	91	75	59	63	81	67	63	65	63
	Male.....	39	43	57	47	43	30	27	39	29	44	35	40
	Female.....	35	31	35	44	32	29	36	42	38	24	30	23
Marion.....	Total.....	302	302	366	320	335	364	354	370	362	399	311	368
	Male.....	171	153	186	151	193	194	193	214	209	184	166	212
	Female.....	131	144	180	169	142	110	161	156	153	145	145	151
Marshall.....	Total.....	30	23	35	42	26	20	22	24	21	23	25	18
	Male.....	17	8	16	22	9	10	13	16	9	18	16	8
	Female.....	13	15	19	20	17	10	9	8	12	5	9	10
Martin.....	Total.....	15	23	16	13	12	14	28	12	17	20	17	16
	Male.....	7	11	7	10	12	10	19	9	9	9	9	7
	Female.....	8	11	9	3	6	4	9	3	8	13	8	9

Miami.....	Total.....	47	88	49	25	27	28	32	36	29	34	30	30
Male.....	Male.....	22	19	25	13	30	15	16	23	16	23	14	13
Female.....	Female.....	25	19	24	12	7	13	16	13	11	11	16	17
Monroe.....	Total.....	24	30	22	28	28	19	26	25	21	25	30	32
Male.....	Male.....	11	18	14	13	12	9	10	11	11	11	21	12
Female.....	Female.....	13	12	8	15	16	10	20	14	10	14	9	20
Montgomery.....	Total.....	38	22	39	35	28	24	28	38	34	27	31	26
Male.....	Male.....	21	12	14	17	29	10	11	17	16	14	16	16
Female.....	Female.....	17	10	25	18	8	10	11	20	18	13	13	10
Morgan.....	Total.....	27	19	31	40	27	26	21	26	23	35	20	21
Male.....	Male.....	15	12	17	20	17	18	15	16	11	22	8	12
Female.....	Female.....	12	4	14	20	10	8	6	10	11	13	12	9
Newton.....	Total.....	6	10	12	6	12	5	10	8	10	9	7	7
Male.....	Male.....	5	5	6	2	6	3	4	4	4	4	4	3
Female.....	Female.....	1	5	7	4	6	2	6	4	6	5	3	4
Noble.....	Total.....	29	30	26	35	31	21	26	24	23	25	23	23
Male.....	Male.....	19	18	12	20	14	10	13	16	13	14	10	10
Female.....	Female.....	10	12	14	15	17	11	13	18	9	11	13	10
Ohio.....	Total.....	6	3	6	5	6	6	9	2	4	4	2	5
Male.....	Male.....	6	3	3	3	3	2	5	2	4	3	1	3
Female.....	Female.....	0	3	3	2	3	4	4	0	0	1	1	2
Orange.....	Total.....	21	18	27	20	19	15	20	21	16	23	19	18
Male.....	Male.....	12	11	10	13	11	6	10	8	8	14	12	10
Female.....	Female.....	9	7	17	7	8	9	10	11	8	9	7	8
Owen.....	Total.....	12	14	14	18	13	18	13	17	10	11	10	14
Male.....	Male.....	6	4	8	6	6	8	7	8	5	6	7	11
Female.....	Female.....	6	10	6	12	7	10	6	9	5	6	3	3
Parke.....	Total.....	23	24	20	19	18	22	27	25	34	26	26	28
Male.....	Male.....	10	6	9	13	5	13	17	21	13	15	11	13
Female.....	Female.....	13	17	11	13	13	9	10	14	21	11	15	15
Perry.....	Total.....	21	21	10	16	20	19	15	15	13	14	14	19
Male.....	Male.....	11	14	4	6	14	9	11	10	8	9	7	12
Female.....	Female.....	10	7	6	6	6	10	4	5	5	6	7	6
Pike.....	Total.....	35	28	27	20	22	28	43	30	20	23	24	23
Male.....	Male.....	16	15	6	10	13	17	16	16	7	13	14	11
Female.....	Female.....	19	13	21	10	9	11	26	14	13	10	10	12
Porter.....	Total.....	24	14	16	21	21	24	24	16	22	13	18	20
Male.....	Male.....	8	6	11	11	14	18	13	9	9	8	9	12
Female.....	Female.....	16	8	5	10	7	6	11	7	13	5	9	7

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Perry	Total.....	19	22	25	23	30	20	33	19	18	27	26	21
	Male.....	9	14	17	9	14	12	14	10	12	10	14	13
	Female.....	10	8	8	14	16	8	19	9	6	17	12	8
Pulaski	Total.....	13	8	8	18	11	7	14	11	9	17	11	11
	Male.....	2	2	5	12	7	2	5	9	5	8	6	4
	Female.....	7	6	3	6	4	5	9	2	4	9	5	7
Putnam	Total.....	16	29	27	32	26	21	17	30	18	17	13	24
	Male.....	12	10	15	18	11	11	9	13	7	14	7	10
	Female.....	4	19	12	14	15	10	8	17	11	13	6	14
Randolph	Total.....	22	36	38	35	31	17	35	34	34	32	34	33
	Male.....	14	20	23	19	12	12	18	17	14	14	23	14
	Female.....	18	16	15	16	19	5	17	17	20	18	11	19
Ripley	Total.....	19	25	28	25	18	24	22	26	16	16	16	18
	Male.....	9	13	17	13	8	13	10	8	8	7	9	10
	Female.....	10	12	11	12	10	11	10	16	8	9	7	8
Rush	Total.....	18	12	18	28	15	14	13	23	16	12	19	20
	Male.....	9	6	10	17	6	10	10	8	8	5	13	6
	Female.....	9	7	8	11	9	4	3	13	8	7	6	14
Scott	Total.....	7	7	10	16	7	8	14	6	17	9	12	9
	Male.....	3	4	3	4	4	4	4	4	11	6	6	6
	Female.....	4	3	7	12	3	4	10	2	6	3	6	3
Shelby	Total.....	27	23	40	32	29	33	42	36	39	28	28	35
	Male.....	15	15	24	19	12	16	26	21	22	10	16	19
	Female.....	12	8	16	13	17	17	16	15	17	18	10	16
Spencer	Total.....	16	26	21	18	20	25	26	18	17	25	17	23
	Male.....	12	11	8	7	9	17	12	9	10	11	9	13
	Female.....	4	15	13	11	11	8	14	9	7	14	8	10
Starks	Total.....	10	14	17	19	9	8	11	12	18	14	6	7
	Male.....	4	10	10	8	9	3	8	7	12	4	4	3
	Female.....	6	4	7	11	.....	5	3	5	6	10	2	4

Burlingame	Total	18	9	20	27	17	11	13	20	15	17	17	10
	Male	8	7	11	11	9	6	4	13	8	11	8	3
	Female	10	2	9	16	8	5	9	7	7	6	9	8
St. Joseph	Total	76	102	118	102	95	85	93	83	83	100	88	92
	Male	47	63	72	56	48	54	53	53	48	65	55	45
	Female	29	40	46	46	47	31	38	41	35	64	35	47
Sullivan	Total	34	30	40	26	29	27	43	38	36	28	21	39
	Male	12	16	21	13	14	19	24	17	18	16	9	19
	Female	22	14	19	13	15	8	19	21	18	12	12	20
Switzerland	Total	15	12	17	14	14	11	21	6	6	12	11	12
	Male	5	6	14	9	7	6	10	3	3	6	5	5
	Female	10	6	3	5	7	5	11	3	3	6	6	7
Tipton	Total	28	49	57	63	56	39	45	57	41	76	50	52
	Male	21	31	31	33	32	17	25	19	19	44	28	21
	Female	17	18	26	30	24	22	20	24	22	31	22	31
Tipton	Total	20	21	24	29	23	14	17	23	23	17	15	10
	Male	13	11	13	13	10	6	8	15	14	8	3	6
	Female	7	10	11	16	13	8	9	8	9	9	12	4
Union	Total	9	10	11	5	9	7	6	6	6	11	6	3
	Male	4	5	3	2	3	3	1	2	4	6	3	1
	Female	5	5	8	3	6	4	5	4	2	5	3	2
Vanderburgh	Total	89	99	105	107	84	119	92	92	84	115	86	109
	Male	41	53	54	60	41	69	49	69	39	64	45	66
	Female	48	46	51	47	43	50	43	36	45	51	41	53
Vermillion	Total	23	22	32	25	23	23	23	25	22	18	15	22
	Male	14	14	20	14	16	12	14	13	14	9	6	13
	Female	9	8	12	11	7	11	9	12	8	9	9	9
Vigo	Total	105	95	129	100	98	89	110	106	103	124	108	83
	Male	44	57	70	51	47	50	59	57	50	69	54	43
	Female	61	38	59	49	51	39	51	49	53	55	54	40
Wabash	Total	28	26	39	31	31	23	29	31	28	23	23	25
	Male	13	8	15	22	13	11	14	21	18	13	13	13
	Female	15	18	24	9	18	12	15	10	10	10	20	12
Warren	Total	8	11	16	13	5	8	13	8	11	8	8	9
	Male	3	5	7	7	3	3	3	3	4	2	2	6
	Female	5	6	9	6	2	5	10	5	7	6	6	3

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Warwick.....	Total.....	30	21	24	25	21	16	25	37	20	23	17	19
	Male.....	15	11	9	14	12	9	11	14	10	12	6	7
	Female.....	15	10	15	11	9	7	14	23	10	11	11	12
Washington.....	Total.....	22	13	30	26	14	21	30	12	21	14	12	12
	Male.....	10	9	15	15	8	11	15	8	9	8	4	4
	Female.....	12	4	15	11	8	10	17	4	12	6	8	8
Wayne.....	Total.....	55	49	68	64	52	46	64	62	55	57	43	74
	Male.....	19	26	32	29	27	21	31	33	26	30	25	36
	Female.....	36	23	36	35	25	25	33	29	29	27	18	38
Wells.....	Total.....	20	14	28	29	22	21	21	25	25	20	18	22
	Male.....	11	5	13	10	15	12	11	11	15	15	8	10
	Female.....	9	9	15	19	7	9	10	13	10	12	8	12
White.....	Total.....	15	19	19	15	15	8	11	24	18	16	12	13
	Male.....	4	14	12	5	8	3	6	13	9	8	7	8
	Female.....	11	5	7	10	7	5	5	11	9	8	5	5
Whitley.....	Total.....	17	19	25	14	20	12	15	13	20	12	10	18
	Male.....	8	9	12	7	13	7	8	7	6	4	3	8
	Female.....	9	10	13	7	8	5	7	6	14	8	7	10
Total males.....		1,550	1,006	1,911	1,780	1,619	1,476	1,674	1,794	1,475	1,586	1,398	1,602
Total females.....		1,429	1,344	1,725	1,905	1,840	1,205	1,494	1,642	1,362	1,480	1,264	1,388
Grand total.....		2,979	2,350	3,636	3,685	2,959	2,681	3,168	3,436	2,837	3,066	2,662	2,990

TABLE No. 3—Continued.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1909.

COUNTIES.	Sex.	0	1	2	3	4	5	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
Adams.....	Total.....	67	8	1	2	2	4	4	7	9	5	5	5	8	3	9	9	23	18
	Male.....	31	4	1	1	1	3	3	2	5	4	2	2	3	2	1	2	5	8
Allen.....	Total.....	219	16	10	11	7	27	29	34	33	51	40	55	34	49	48	52	62	82
	Male.....	121	7	5	7	2	13	16	15	23	30	17	21	16	27	27	34	43	44
Bartholomew.....	Total.....	98	9	5	4	5	14	13	19	10	21	23	34	18	22	21	18	20	38
	Male.....	61	11	1	2	2	9	1	6	10	11	7	17	9	11	16	18	21	35
Benton.....	Total.....	26	6	1	1	1	6	1	4	4	3	2	9	3	6	7	13	13	13
	Male.....	35	5	1	1	1	3	1	2	6	8	5	8	6	5	9	5	9	13
Blackford.....	Total.....	30	8	1	1	1	1	1	2	1	4	4	4	5	3	3	1	6	7
	Male.....	10	2	1	1	1	1	1	2	1	1	2	2	2	2	1	1	3	4
Boone.....	Total.....	49	7	4	3	1	7	4	5	8	6	5	5	11	6	8	10	11	4
	Male.....	27	5	3	2	1	3	4	3	5	2	1	1	8	1	3	7	6	4
Boone.....	Total.....	23	2	4	1	1	4	2	3	3	4	4	4	3	5	5	3	5	4
	Male.....	61	10	1	2	1	6	3	9	13	6	8	9	9	9	14	12	13	23
Brown.....	Total.....	43	5	1	1	1	3	3	4	7	5	5	1	5	4	9	5	8	15
	Male.....	18	5	1	1	1	3	3	4	7	5	5	8	4	5	5	7	5	8
Brown.....	Total.....	19	3	3	1	1	1	1	1	5	2	3	2	2	5	4	7	5	9
	Male.....	9	3	1	1	1	1	2	1	1	2	1	2	2	3	1	5	4	3
Carroll.....	Total.....	10	1	1	1	1	1	1	1	4	1	2	2	2	2	3	2	1	6
	Male.....	61	5	1	2	1	4	2	2	10	7	2	4	3	10	9	15	21	23
Cash.....	Total.....	38	1	1	1	1	2	2	2	5	2	1	1	1	2	3	6	8	8
	Male.....	23	4	1	2	1	2	2	2	5	5	1	1	1	2	2	3	6	8
Cash.....	Total.....	80	15	8	6	5	9	8	15	17	16	25	19	35	25	21	34	39	53
	Male.....	48	10	1	2	1	3	4	4	11	16	16	11	21	26	13	27	25	24
Cash.....	Total.....	33	5	7	3	5	6	4	11	6	8	9	8	14	9	8	7	14	28
	Male.....	33	5	7	3	5	6	4	11	6	8	9	8	14	9	8	7	14	28

Cart.	Total.	105	14	7	6	7	14	8	17	15	20	13	17	14	15	26	22	30	31
	Male.	64	7	5	4	3	11	6	11	12	5	7	6	6	5	14	8	17	10
	Female.	41	7	2	2	4	3	2	6	3	15	6	11	8	5	12	14	13	21
Clay	Total.	99	20	8	9	1	20	4	14	7	12	7	15	11	19	14	14	30	29
	Male.	59	10	5	4	1	13	2	6	2	3	6	4	3	10	7	6	14	14
	Female.	40	10	3	5		7	2	8	5	9	1	11	8	9	7	8	16	15
Clinton	Total.	84	15	9	4	3	5	9	8	10	14	17	9	8	12	13	16	26	22
	Male.	45	7	5	4	1	2	4	3	4	5	6	6	5	5	7	14	15	11
	Female.	39	8	2			3	5	5	6	9	9	3	3	7	6	2	11	11
Crawford	Total.	34	6	2	1	1	8	2	9	11	7	9	5	7	4	2	9	6	12
	Male.	22	4	1	1	1	3		6	4	1	6	3	2	2	6	2	2	7
	Female.	12	2	1			5	2	3	7	6	3	2	5	2		3	4	5
Davies	Total.	94	17	10	1		9	6	17	13	12	12	10	10	7	9	13	17	16
	Male.	52	7	4			3	3	13	6	6	6	2	2	4	4	7	9	6
	Female.	42	10	6	1		6	3	4	7	6	6	8	8	3	5	6	8	10
Dearborn	Total.	41	4	4	1	1	1	3	11	8	9	8	4	14	4	8	15	15	32
	Male.	26	4	1	1	1		2	4	4	3	5	2	8	2	2	7	8	16
	Female.	15		3			1	1	7	4	6	3	2	6	2	5	8	7	16
Decatur	Total.	49	5	7	3	1	5	3	5	6	7	5	9	9	9	9	10	21	25
	Male.	21	3	3	1		2	2	3	3	2	3	3	4	2	5	9	12	16
	Female.	28	2	4	2	1	3	1	2	3	5	2	6	5	6	4	2	13	13
DeKalb	Total.	60	10	5	3	2	1	9	8	7	3	9	12	16	7	12	12	19	27
	Male.	38	9	3	1			3	4	5	2	4	3	19	3	0	6	12	18
	Female.	22	1	2	2	2	1	6	4	2	1	5	9	7	4	0	9	7	9
Delaware	Total.	142	18	9	5	1	15	13	18	19	27	20	23	24	24	19	32	37	32
	Male.	88	4	3	2		9	6	10	10	13	8	10	10	9	10	18	20	19
	Female.	54	12	5	2	1	6	7	11	9	14	12	13	14	15	9	14	19	13
Dubois	Total.	66	12	3	5	1	5	4	7	7	10	6	8	7	8	12	10	11	17
	Male.	44	6	3	3		2	1	2	3	5	5	6	5	5	5	6	10	10
	Female.	22	6		2	1	3	3	4	4	7	5	6	2	3	4	5	5	7
Elkhart	Total.	114	13	7		2	18	8	15	20	15	16	26	21	30	34	28	45	50
	Male.	66	8	5		2	9	6	7	9	7	9	13	11	13	18	12	20	30
	Female.	48	5	2			9	2	8	11	8	12	13	10	17	16	16	25	20
Fayette	Total.	24	7	3	1	1	1	6	5	7	5	5	6	5	12	5	6	16	10
	Male.	14	4	1	1		1	5	8	5	3	3	3	3	2	4	5	8	5
	Female.	10	3			1		1	3	2	2	2	3	2	7	1	1	8	5

TABLE No. 3—Continued.

COUNTIES.	Sex.	0	1	2	3	4	5	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
Floyd.....	Total.....	97	11	5	5	1	15	11	12	17	16	17	21	27	19	16	27	30	28
	Male.....	56	2	1	1	1	8	3	4	9	7	4	8	15	10	8	17	12	9
	Female.....	41	9	4	3	...	7	8	8	8	9	13	13	12	9	8	10	18	16
Fountain.....	Total.....	68	9	4	1	...	5	4	6	18	8	6	11	8	3	10	10	14	24
	Male.....	35	6	3	1	...	5	2	3	7	2	3	...	3	1	4	6	5	12
	Female.....	23	3	1	...	...	...	2	3	11	6	3	11	5	2	6	4	9	12
Franklin.....	Total.....	35	5	3	1	...	4	3	2	5	11	6	3	8	6	4	8	15	17
	Male.....	20	4	1	1	...	2	3	2	1	5	3	1	3	3	1	4	9	9
	Female.....	15	1	2	...	...	2	...	...	4	6	3	2	5	3	3	4	6	8
Fulton.....	Total.....	42	6	3	1	...	3	5	5	...	5	6	3	4	8	11	9	19	19
	Male.....	24	3	1	...	...	2	2	2	...	...	2	1	2	5	4	6	14	9
	Female.....	18	3	2	...	...	1	3	3	...	5	4	2	2	3	7	3	5	10
Gibson.....	Total.....	114	17	13	3	4	11	14	18	17	11	13	17	16	12	23	17	17	23
	Male.....	54	11	5	1	1	5	6	12	11	3	7	9	8	6	11	10	11	13
	Female.....	60	6	8	2	3	6	8	6	6	8	6	8	8	6	12	7	6	10
Grant.....	Total.....	150	17	5	1	3	12	11	18	25	18	22	7	26	25	22	37	52	92
	Male.....	74	10	1	...	...	6	7	17	12	10	9	1	23	10	13	20	36	71
	Female.....	76	7	4	1	2	6	7	11	13	8	13	6	3	15	9	17	16	21
Greene.....	Total.....	145	32	15	6	4	17	8	17	17	14	11	16	22	19	17	12	12	28
	Male.....	74	17	5	2	3	11	5	8	8	7	5	8	13	10	9	8	4	13
	Female.....	71	15	10	4	2	6	3	9	9	7	6	10	12	8	8	5	8	15
Hamilton.....	Total.....	76	11	3	1	2	7	7	11	6	14	6	14	17	4	18	19	19	25
	Male.....	40	6	3	1	...	2	4	5	2	8	4	6	10	1	8	18	8	10
	Female.....	26	5	...	...	...	5	6	6	4	6	2	8	7	3	8	11	11	15
Hancock.....	Total.....	52	15	1	1	1	7	5	10	9	13	6	8	4	6	22	9	14	27
	Male.....	28	12	1	...	...	4	4	7	4	8	2	5	1	2	15	5	8	12
	Female.....	23	3	...	...	1	3	1	3	5	7	4	3	3	4	7	4	6	15

Harrison.....	47	7	4	1	3	4	5	16	10	16	12	7	7	9	13	9	15	32
Male.....	28	3	2	1	2	1	2	6	4	10	4	1	4	5	8	3	6	8
Female.....	19	4	2	1	1	3	3	10	6	6	8	6	3	4	5	6	9	15
Headricks.....	50	11	6	2	2	5	2	9	14	10	10	11	11	9	11	13	8	28
Male.....	28	10	3	1	1	2	1	5	4	5	5	6	4	4	7	6	5	11
Female.....	22	1	3	1	1	3	1	4	10	5	5	5	7	2	5	4	3	17
Henry.....	99	15	4	2	2	6	6	11	14	9	9	7	13	12	21	18	26	38
Male.....	62	9	1	1	1	6	1	9	9	6	6	4	6	6	11	11	10	17
Female.....	37	6	3	1	1	1	5	2	5	3	3	3	7	6	10	7	16	21
Howard.....	96	18	7	1	4	7	8	16	15	16	12	15	18	12	16	20	21	34
Male.....	60	10	5	1	2	5	4	10	8	8	5	7	9	7	10	14	15	17
Female.....	36	8	2	1	2	2	4	6	10	8	7	8	9	5	6	6	6	17
Huntington.....	62	10	2	1	1	8	4	3	16	8	9	7	10	15	23	24	18	24
Male.....	34	5	1	1	1	4	2	3	11	8	2	3	6	9	8	14	10	12
Female.....	28	5	1	1	1	4	2	3	5	11	7	4	4	6	15	10	8	12
Jackson.....	88	7	4	6	1	6	8	18	6	12	11	13	12	14	12	18	18	27
Male.....	57	4	2	3	1	4	2	9	2	6	4	6	7	13	3	7	10	11
Female.....	31	3	2	3	1	2	9	9	4	6	7	7	5	11	9	11	8	16
Jasper.....	43	2	4	1	1	2	1	7	5	2	1	3	2	4	5	7	10	13
Male.....	25	1	4	1	1	2	1	6	3	2	1	2	1	1	2	3	3	10
Female.....	18	1	1	1	1	1	1	1	2	1	1	1	1	3	3	4	7	3
Jay.....	74	9	2	3	4	7	4	15	13	12	12	9	6	12	14	10	26	26
Male.....	46	4	2	1	3	3	3	10	9	5	11	5	4	4	8	6	13	11
Female.....	28	5	2	2	1	4	1	5	4	7	1	4	2	8	6	11	13	17
Jefferson.....	54	9	7	2	3	2	3	9	11	8	8	7	11	7	19	21	21	23
Male.....	29	4	4	1	1	2	1	6	3	2	4	5	3	2	13	13	6	11
Female.....	25	5	3	1	2	1	2	3	9	6	4	2	8	2	6	8	15	10
Jennings.....	34	11	1	2	1	2	3	5	7	7	5	7	5	4	16	12	13	12
Male.....	17	5	1	1	1	1	2	3	3	2	3	2	3	2	7	12	6	8
Female.....	17	6	1	1	1	1	1	2	4	4	2	4	2	2	9	1	7	4
Johnson.....	50	4	6	2	2	3	5	9	9	9	9	4	10	6	12	9	18	21
Male.....	26	3	3	1	1	3	4	7	3	4	5	3	4	4	6	6	9	15
Female.....	24	1	3	1	1	1	4	2	6	5	4	1	6	2	6	3	9	6
Kear.....	136	39	15	5	6	12	8	19	17	26	25	11	14	16	14	18	19	29
Male.....	85	25	7	4	3	7	4	10	6	9	12	7	7	7	10	9	10	23
Female.....	51	14	8	1	3	5	4	9	11	17	13	4	7	6	6	8	10	7

Kearney.....	Total.....	67	15	5	7	1	2	5	9	3	2	9	8	3	9	5	6	12	21	26	35
	Male.....	45	9	3	4	1	1	1	2	4	2	4	4	2	1	3	2	6	11	16	18
	Female.....	22	6	2	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	17
Lagrange.....	Total.....	42	10	4	.....	2	3	3	4	4	10	6	10	1	4	10	6	11	18	18
	Male.....	15	5	3	.....	1	1	1	2	1	4	5	4	5	2	1	1	1	7	11
	Female.....	27	5	1	.....	1	2	2	2	3	6	1	6	.....	.....	.....	.....	3	7	7
Lake.....	Total.....	434	81	22	16	14	22	12	22	45	53	45	52	42	46	46	45	28	20	33	
	Male.....	234	41	12	9	4	18	10	13	31	36	39	38	27	38	36	16	13	17	17	
	Female.....	200	40	10	7	10	5	2	9	14	17	6	14	15	8	9	16	16	16	16	
Laporte.....	Total.....	129	10	6	5	9	13	7	11	22	20	20	21	25	23	23	33	37	34	34	
	Male.....	79	8	5	4	5	9	4	5	16	11	11	15	13	14	10	25	19	20	21	
	Female.....	50	2	1	1	4	4	3	6	6	9	9	6	12	9	13	8	7	14	14	
Lawrence.....	Total.....	109	27	10	6	1	6	8	24	20	26	15	14	19	12	13	19	20	20	21	
	Male.....	57	13	5	1	1	5	6	12	11	14	9	7	9	8	5	11	12	10	10	
	Female.....	52	14	5	5	.....	.....	2	12	9	12	6	7	10	4	8	8	8	11	11
Madison.....	Total.....	218	40	23	6	6	33	21	23	29	24	31	33	40	37	35	37	50	35	35	
	Male.....	120	19	14	3	4	19	12	16	16	13	11	13	22	21	20	18	13	16	16	
	Female.....	98	21	9	3	2	14	9	7	13	11	20	20	18	16	15	19	17	20	20	
Marion.....	Total.....	689	114	46	25	19	76	43	121	171	199	174	202	191	231	238	236	236	236	236	
	Male.....	392	67	27	18	12	42	16	55	103	108	95	107	101	129	139	131	132	117	117	
	Female.....	297	47	19	7	7	34	28	66	68	91	79	95	90	102	99	105	104	109	109	
Marshall.....	Total.....	68	11	6	1	2	7	8	10	5	7	7	7	4	12	16	19	13	25	25	
	Male.....	38	6	4	1	1	2	4	4	2	4	4	3	2	4	5	13	6	13	13	
	Female.....	30	5	2	.....	.....	5	4	6	3	3	3	4	2	8	11	7	7	12	12
Martin.....	Total.....	35	5	1	4	3	5	7	11	14	9	7	14	6	8	4	10	10	13	13	
	Male.....	23	3	.....	3	1	2	4	5	6	3	4	7	4	4	1	8	5	9	9
	Female.....	12	2	1	1	2	3	2	7	8	6	6	7	2	4	3	2	5	4	4	
Miami.....	Total.....	79	8	4	4	2	4	15	15	27	15	17	20	10	10	20	20	16	33	33	
	Male.....	45	4	1	3	1	3	8	10	18	9	8	8	5	5	9	12	6	16	16	
	Female.....	34	4	3	1	1	1	7	5	9	6	9	12	5	5	11	8	10	17	17	
Monroe.....	Total.....	69	15	6	1	3	7	6	10	18	19	5	9	9	8	15	11	12	17	17	
	Male.....	41	8	3	1	2	5	3	8	7	3	4	4	4	5	9	4	10	12	12	
	Female.....	28	7	3	.....	1	2	3	2	10	12	2	5	5	6	7	7	7	5	5
Montgomery.....	Total.....	70	8	4	.....	1	5	6	15	14	13	13	11	11	15	23	17	19	31	31
	Male.....	41	5	1	.....	.....	3	2	9	8	8	9	6	6	9	16	11	7	18	18
	Female.....	29	3	3	.....	1	2	4	6	6	5	4	5	5	6	6	6	12	13	13

TABLE No. 3—Continued.

COUNTIES.	Sex.	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Morgan.....	Total.....	70	16	4	3	.....	4	6	16	7	7	7	4	8	9	17	15	18	26	
	Male.....	40	9	3	2	.....	3	4	9	5	5	5	4	6	5	12	10	13	16	
	Female.....	30	7	1	1	.....	1	2	7	2	2	2	2	2	4	5	3	5	10	
Newton.....	Total.....	26	5	2	1	.....	.....	1	4	3	3	2	3	2	.....	1	3	3	8	
	Male.....	15	2	2	.....	.....	.....	.....	2	2	2	2	1	1	.....	.....	.....	1	6	
	Female.....	11	3	.....	1	.....	.....	1	1	1	1	1	2	1	.....	.....	.....	2	2	
Noble.....	Total.....	68	8	7	1	1	4	1	11	13	9	9	8	15	9	18	20	20	24	
	Male.....	38	2	5	1	1	2	.....	3	3	4	4	3	8	5	11	15	9	14	
	Female.....	30	6	2	.....	.....	1	1	8	4	5	5	5	7	4	7	5	11	10	
Ohio.....	Total.....	9	1	1	.....	.....	1	2	3	1	1	1	2	.....	1	4	3	5	5	
	Male.....	6	.....	1	.....	.....	.....	2	2	1	.....	1	1	.....	.....	.....	2	2	3	
	Female.....	3	1	.....	.....	.....	1	1	1	.....	1	.....	1	.....	.....	1	2	3	2	
Orange.....	Total.....	57	8	4	.....	1	7	1	8	10	8	8	8	10	7	11	12	13	18	
	Male.....	31	7	4	.....	.....	6	1	4	3	3	3	5	5	6	6	6	7	8	
	Female.....	26	1	.....	1	.....	1	.....	4	7	5	5	3	5	1	6	6	6	10	
Owen.....	Total.....	32	10	5	1	.....	.....	1	6	5	1	3	4	5	4	5	9	17	9	
	Male.....	15	4	2	.....	.....	.....	.....	3	3	.....	.....	.....	4	3	5	6	10	5	
	Female.....	17	6	3	1	.....	.....	1	3	2	.....	3	3	1	1	1	3	7	4	
Paris.....	Total.....	32	19	6	3	3	8	12	5	19	9	9	6	6	6	12	8	13	16	
	Male.....	46	9	2	1	1	7	8	1	7	2	2	3	2	1	6	3	7	7	
	Female.....	36	10	4	2	2	1	4	4	12	7	5	3	4	5	6	5	6	9	
Perry.....	Total.....	44	12	9	5	.....	9	8	4	5	9	8	5	3	3	7	10	6	6	
	Male.....	29	4	4	.....	.....	8	5	3	3	4	5	5	3	3	6	7	4	1	
	Female.....	15	8	5	1	.....	1	3	1	2	5	3	.....	.....	.....	1	3	2	5	
Pike.....	Total.....	86	19	7	4	1	13	5	15	9	8	15	6	18	11	14	12	18	18	
	Male.....	49	12	4	1	1	6	3	5	3	2	4	3	8	5	6	8	9	6	
	Female.....	37	7	3	.....	.....	7	2	10	7	6	11	3	5	6	8	4	9	12	

Porter.....	Total.....	45	3	2	2	2	1	3	5	2	1	5	7	15	4	9	4	7	11	19	9
	Male.....	21	1	1	1	1	1	2	3	2	1	3	5	12	2	7	3	5	4	10	5
	Female.....	24	2	1	1	1	1	1	2	3	1	2	2	3	3	2	1	2	7	9	4
Posey.....	Total.....	68	14	5	4	4	4	9	9	4	4	13	12	12	9	11	6	12	12	11	16
	Male.....	44	11	2	1	1	1	6	6	2	2	8	3	3	4	7	4	7	8	9	16
	Female.....	24	3	3	3	3	3	3	3	2	2	5	9	9	5	4	2	5	4	2	0
Pulaski.....	Total.....	46	6	3	3	3	3	2	2	2	2	5	3	3	6	2	3	2	4	4	5
	Male.....	29	6	3	3	3	3	2	2	2	2	5	1	1	5	2	2	2	2	1	7
	Female.....	17	1	1	1	1	1	1	1	1	1	1	2	2	1	2	1	.....	2	4	2
Putnam.....	Total.....	36	11	4	3	2	2	4	4	4	4	6	9	7	7	8	6	9	5	11	20
	Male.....	20	3	1	2	1	1	4	1	1	1	2	4	4	6	2	2	5	3	7	7
	Female.....	16	8	3	1	1	1	1	3	3	3	4	3	3	1	6	4	4	2	4	13
Randolph.....	Total.....	82	14	4	2	2	2	8	8	8	11	14	10	14	16	12	12	13	12	7	24
	Male.....	37	10	2	1	1	1	3	3	3	6	9	4	9	7	5	2	5	9	5	35
	Female.....	45	4	2	1	1	1	5	5	5	5	5	6	7	13	7	6	8	3	2	20
Ripley.....	Total.....	45	6	1	1	1	1	3	4	4	4	6	13	10	6	8	8	8	8	13	21
	Male.....	23	3	1	1	1	1	2	2	3	2	3	7	3	3	3	7	1	3	8	7
	Female.....	22	3	1	1	1	1	1	1	1	1	3	6	7	3	1	1	5	5	6	9
Rush.....	Total.....	34	6	4	1	1	1	3	2	2	9	11	8	7	5	6	6	8	8	11	18
	Male.....	21	3	3	1	1	1	2	1	1	6	4	4	1	1	3	4	4	5	8	8
	Female.....	13	3	1	1	1	1	1	1	1	3	7	4	6	4	3	4	4	3	3	10
Scott.....	Total.....	30	2	2	2	2	2	2	4	4	6	3	4	4	4	3	4	4	4	7	12
	Male.....	14	2	2	2	2	2	1	2	2	5	3	3	4	3	2	2	2	1	3	5
	Female.....	16	1	1	1	1	1	1	2	2	1	1	1	1	1	1	2	.....	3	4	7
Shelby.....	Total.....	73	14	8	4	2	2	8	12	12	7	14	15	16	7	11	7	18	20	20	20
	Male.....	43	11	5	1	1	1	2	6	6	5	7	8	2	4	5	4	4	11	13	16
	Female.....	30	3	3	3	3	3	3	7	7	2	7	7	14	3	6	6	3	7	8	14
Spencer.....	Total.....	63	6	4	2	2	2	8	4	4	8	7	9	7	8	7	2	2	4	12	14
	Male.....	34	2	1	1	1	1	3	2	2	3	4	5	3	4	5	1	1	6	7	9
	Female.....	29	4	3	3	3	3	5	2	2	5	3	4	4	4	2	1	1	6	7	6
Stark.....	Total.....	44	1	3	1	1	1	4	1	1	5	11	2	4	3	3	6	6	6	6	5
	Male.....	23	1	1	1	1	1	2	1	1	3	7	2	3	1	1	1	4	3	5	3
	Female.....	21	1	2	2	2	2	2	1	2	2	4	2	3	2	2	5	2	1	1	2
Steuben.....	Total.....	31	4	2	2	2	2	3	3	3	3	3	7	4	3	4	4	9	7	14	18
	Male.....	15	3	1	1	1	1	1	1	1	2	2	1	1	1	1	1	3	4	11	12
	Female.....	16	1	1	1	1	1	2	2	2	1	1	3	3	2	3	3	6	3	3	6

TABLE No. 3—Continued.

COUNTIES.	Sex.	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65
St. Joseph.....	Total.....	333	33	22	11	12	21	14	33	43	49	44	39	35	44	43	35	55	54
	Male.....	193	18	11	7	7	12	8	25	25	27	28	20	20	23	23	22	30	30
	Female.....	138	15	11	4	5	9	6	18	18	22	16	19	12	16	21	18	19	24
Sullivan.....	Total.....	124	28	9	4	.....	13	7	11	12	11	13	11	10	4	14	8	13	24
	Male.....	73	16	4	3	.....	5	4	6	5	3	7	7	4	1	7	4	5	13
	Female.....	51	12	5	1	.....	8	3	5	6	8	6	3	6	3	7	4	8	11
Switzerland.....	Total.....	21	6	1	1	.....	2	4	5	5	3	10	3	6	3	6	5	7	10
	Male.....	14	5	1	.....	.....	2	2	2	1	3	7	1	3	2	1	3	2	5
	Female.....	7	1	.....	1	.....	.....	2	4	2	.....	3	2	3	1	5	2	5	5
Tippecanoe.....	Total.....	90	10	4	3	1	5	12	12	15	23	20	25	20	30	39	35	49	42
	Male.....	49	6	3	1	.....	2	7	9	9	14	7	7	15	9	19	22	17	18
	Female.....	41	4	1	2	1	3	5	3	6	9	13	10	11	11	17	19	27	24
Tipton.....	Total.....	49	15	7	2	2	5	4	5	11	12	8	7	13	.....	9	9	10	16
	Male.....	29	9	3	2	1	3	2	4	7	4	3	2	3	.....	8	5	5	6
	Female.....	20	6	4	.....	1	2	2	6	7	9	6	4	9	.....	1	4	5	10
Union.....	Total.....	19	.....	.....	.....	.....	.....	1	2	1	3	1	1	5	4	4	8	4	6
	Male.....	8	.....	.....	.....	.....	.....	.....	1	1	2	1	1	.....	.....	.....	2	2	2
	Female.....	11	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	4	3	6	2	4
Vanderburgh.....	Total.....	248	26	13	11	8	20	24	36	51	60	46	56	63	51	53	59	67	69
	Male.....	146	18	6	8	6	9	11	17	20	23	27	33	35	25	25	33	36	35
	Female.....	102	18	7	3	2	11	13	19	31	37	19	23	28	26	31	26	31	34
Vermillion.....	Total.....	66	21	18	4	3	5	4	2	9	9	9	6	10	6	13	7	11	21
	Male.....	32	13	6	2	1	4	2	1	5	5	3	4	8	4	4	5	4	16
	Female.....	34	8	13	2	2	1	2	1	4	4	6	2	2	2	2	2	7	5
Vigo.....	Total.....	266	49	21	12	11	26	24	44	63	67	56	61	57	47	64	67	59	73
	Male.....	142	28	10	8	6	14	12	18	29	33	36	32	34	32	38	33	34	37
	Female.....	124	21	11	4	5	12	12	26	34	36	26	28	21	25	26	33	42	36
Wabash.....	Total.....	50	10	4	6	2	6	7	9	9	10	12	12	8	10	16	20	23	19
	Male.....	37	6	3	3	1	3	3	2	2	4	3	5	6	5	7	7	9	11
	Female.....	13	4	1	3	1	3	4	6	7	6	10	8	2	5	9	13	14	8

Warren	Total	14	6	2	1	4	3	4	6	8	5	5	4	6	6	6	4
	Male	10	2	1	1	3	2	1	2	3	1	2	3	1	2	3	3
	Female	4	4	1	1	1	1	3	4	5	4	3	5	5	4	3	1
Warrick	Total	68	12	1	1	4	4	10	10	15	7	10	14	9	15	16	15
	Male	32	9	1	1	3	8	5	4	4	2	5	8	5	6	6	8
	Female	36	3	1	1	1	5	5	6	11	5	5	6	4	9	10	7
Washington	Total	34	9	4	2	1	2	1	7	4	7	10	12	9	12	15	18
	Male	19	3	3	2	1	2	1	3	1	3	8	6	10	2	4	8
	Female	15	6	1	2	1	1	1	4	3	4	2	2	7	8	7	13
Wayne	Total	97	14	5	2	2	8	13	21	20	25	20	32	31	49	47	48
	Male	49	8	3	1	1	5	7	9	8	15	16	17	16	31	21	23
	Female	48	6	2	1	1	3	6	12	12	10	14	11	15	28	27	25
Wells	Total	83	19	6	1	1	10	4	8	15	5	7	8	8	8	16	14
	Male	36	9	3	1	1	7	2	3	6	9	4	5	3	6	6	7
	Female	17	10	3	1	1	3	2	2	9	4	3	4	5	2	10	7
White	Total	24	5	2	1	1	5	3	5	4	1	3	7	8	15	14	17
	Male	14	1	2	1	1	3	2	2	2	2	1	4	3	7	7	9
	Female	10	4	1	1	1	2	1	3	2	1	2	3	4	8	7	8
Whitley	Total	33	6	3	1	1	3	2	7	4	4	4	3	7	8	11	20
	Male	22	2	3	1	1	2	5	6	5	4	2	2	2	3	3	6
	Female	11	4	1	1	1	1	2	3	4	2	1	1	5	5	8	14
Total male		4,425	718	283	166	104	314	519	681	661	582	623	690	854	956	1,105	1,314
Total female		5,614	878	277	132	108	292	540	656	710	635	660	606	731	786	916	1,167
Grand total		7,839	1,296	569	298	212	606	1,069	1,336	1,371	1,207	1,283	1,305	1,585	1,712	2,021	2,481

TABLE No. 3—Continued.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1909.

COUNTIES.	Sex.		70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Adams.....	Total.	26	18	23	2			257		227	29	1	107	96	53	1	257
	Male.	14	9	7	1			121		102	11	1	55	48	17	1	121
	Female.	12	9	16	1			136		125	11		52	48	36		136
Allen.....	Total.	64	73	62	7	1	1	1,047	9	850	187	19	471	365	210	10	1,056
	Male.	27	33	22	2	1	1	546	6	439	101	12	257	204	83	9	552
	Female.	37	40	30	5			501	3	411	86	7	214	161	123	1	504
Bartholomew.....	Total.	34	29	22	3	1	1	331	6	315	21	1	123	144	67	3	337
	Male.	19	14	11	2	1	1	169	4	156	16	1	62	86	22	3	173
	Female.	15	15	11	1			162	2	159	5		61	58	45		164
Benton.....	Total.	5	8	5	3			102		93	8	1	47	29	23	3	102
	Male.	2	5	3	3			44		39	5		21	14	7	2	44
	Female.	3	3	2				58		54	3	1	26	15	16	1	58
Blackford.....	Total.	12	19	8	1	1	1	195		183	11	1	95	70	28	2	195
	Male.	4	13	5	1	1	1	107		100	6	1	56	37	12	2	107
	Female.	8	6	3				88		83	5		39	33	16		88
Boone.....	Total.	21	36	42	5	1	1	313		308	3	2	111	180	69	3	313
	Male.	12	18	15	5			170		167	3		72	74	22	2	170
	Female.	9	18	24		1	1	143		141		2	39	56	47	1	143
Brown.....	Total.	11	10	5	2	1	1	101		100		1	34	40	37		101
	Male.	5	2	2	1			51		51		1	20	20	11		51
	Female.	6	8	3	1	1	1	50		49			14	20	16		50
Carroll.....	Total.	21	24	22	5			253		243	9	1	94	95	60	1	253
	Male.	8	11	11	2			141		135	5	1	43	53	24		141
	Female.	13	13	11	3			112		108	4		51	42	36	1	112

Cass.....	Total.....	43	40	41	6	1	564	5	486	66	17	223	212	119	16	549
	Male.....	23	31	24	4	1	324	1	276	37	13	133	133	46	13	325
	Female.....	21	10	17	2	1	240	4	210	29	5	89	79	73	3	244
Clark.....	Total.....	38	34	31	8	.....	445	47	449	39	4	228	164	98	1	492
	Male.....	18	15	18	4	.....	237	24	226	21	4	143	82	35	1	361
	Female.....	20	19	13	4	.....	208	23	223	18	.....	85	82	64	.....	231
Clay.....	Total.....	24	22	33	7	.....	416	3	385	29	5	202	128	83	7	419
	Male.....	12	12	16	4	.....	213	1	196	14	8	116	64	30	3	313
	Female.....	12	10	17	3	.....	204	2	189	15	2	86	64	53	4	306
Clinton.....	Total.....	29	26	22	2	1	361	3	337	5	2	169	137	67	1	364
	Male.....	14	8	9	2	.....	182	2	180	2	2	88	71	24	1	184
	Female.....	15	18	13	.....	1	179	1	177	3	.....	71	66	43	.....	180
Crawford.....	Total.....	9	13	13	4	.....	174	.....	173	1	.....	73	69	31	1	174
	Male.....	6	10	5	1	.....	96	.....	94	1	.....	45	37	12	1	96
	Female.....	3	3	8	3	.....	79	.....	79	.....	.....	28	32	19	.....	79
Davies.....	Total.....	28	19	20	4	.....	343	1	327	15	2	175	116	53	.....	244
	Male.....	16	11	13	.....	.....	173	1	163	9	2	96	63	15	.....	174
	Female.....	12	8	7	4	.....	170	.....	164	6	.....	79	53	38	.....	170
Dearborn.....	Total.....	31	32	27	4	2	177	2	223	45	11	98	107	65	9	279
	Male.....	19	21	13	1	2	151	2	114	28	11	53	68	24	8	153
	Female.....	12	11	14	3	.....	126	.....	109	17	.....	45	39	41	1	126
Deatur.....	Total.....	19	25	38	7	1	276	2	255	17	6	101	89	74	14	278
	Male.....	9	17	19	5	1	137	1	123	10	5	49	54	27	8	188
	Female.....	10	8	19	2	.....	139	1	132	7	1	52	35	47	6	140
Detail.....	Total.....	29	23	22	4	.....	301	.....	286	15	.....	124	112	65	.....	301
	Male.....	17	10	9	2	.....	153	.....	146	6	.....	61	66	25	.....	153
	Female.....	12	13	13	2	.....	149	.....	140	9	.....	63	46	40	.....	149
Delaware.....	Total.....	44	48	45	9	.....	606	18	597	25	2	295	255	131	3	694
	Male.....	20	31	23	4	.....	318	8	312	13	1	158	118	49	1	326
	Female.....	24	17	22	5	.....	288	10	285	12	1	107	117	73	2	298
Dubois.....	Total.....	10	18	18	1	.....	246	.....	208	34	4	122	80	43	2	246
	Male.....	6	10	10	1	.....	137	.....	114	21	2	77	39	20	1	137
	Female.....	4	8	8	.....	.....	109	.....	94	13	3	45	41	23	1	109
Elkhart.....	Total.....	44	52	51	9	1	618	1	551	55	13	215	262	137	5	619
	Male.....	22	22	32	4	1	321	1	282	34	6	125	146	43	3	323
	Female.....	22	20	19	4	.....	297	.....	269	21	7	87	116	94	.....	297

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 40 80	75 45 85	80 50 90	85 55 95	90 60 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Fayette.....	Total.....	16	10	20	8	1	1	189	7	187	8	1	72	64	37	8	178
	Male.....	8	6	8	4	1	1	89	6	90	4	1	43	33	16	8	96
	Female.....	8	4	12		1		80	1	77	4		29	31	21		81
Floyd.....	Total.....	31	31	32	6	3		445	27	422	49	1	211	171	89	1	472
	Male.....	14	13	16	3	2		220	12	208	22	1	114	84	33	1	232
	Female.....	17	18	16	3	1		225	15	213	27		97	87	56		240
Fountain.....	Total.....	24	27	24				273	1	265	8	1	112	102	60		274
	Male.....	15	16	12				145		138	7	1	68	58	19		145
	Female.....	9	11	12				128	1	127	1		44	44	41		129
Franklin.....	Total.....	21	23	34		7		221		191	30		80	70	70	1	221
	Male.....	12	7	13	4	4		108		98	13		43	38	37		106
	Female.....	9	16	21		3		113		93	17		37	32	33	1	113
Fulton.....	Total.....	10	20	21		6		206		198	12	1	76	78	51	1	206
	Male.....	2	10	12	4	4		106		98	7	1	37	47	21	1	106
	Female.....	8	10	9		2		100		96	5		39	31	30		100
Gibson.....	Total.....	21	19	27	4	4	1	405	37	412	18	2	227	135	70		432
	Male.....	14	10	10	1	1	1	205	15	210	8	2	119	80	21		220
	Female.....	7	9	17	3	3		200	12	202	10		108	55	49		212
Grant.....	Total.....	88	68	83	10	10		721	39	708	48	9	293	264	197	6	760
	Male.....	67	47	58	8	8		440	28	426	37	5	168	163	133	4	468
	Female.....	19	21	15	2	2		281	11	277	11	4	125	101	64	2	292
Greene.....	Total.....	30	27	30	4	4		498	3	479	20	2	271	151	78	1	501
	Male.....	14	12	16	2	2		243	2	237	17	1	143	78	23	1	245
	Female.....	16	15	14	2	2		255	1	252	3	1	128	73	55		256
Hamilton.....	Total.....	21	28	35	4	4		344	12	350	4	4	142	136	78		326
	Male.....	10	20	23	3	3		185	9	189	4	2	85	78	31		194
	Female.....	11	16	15	1	1		159	3	161		1	57	58	47		163

Hancock...	Total	23	18	22	...	270	2	264	6	2	108	114	50	...	273
	Male	11	11	10	...	148	2	145	4	1	65	68	17	...	160
	Female	11	7	12	...	122	...	119	2	1	43	46	33	...	123
Harrison...	Total	19	23	23	3	233	3	268	16	2	113	110	62	1	286
	Male	10	13	10	2	140	2	133	8	2	61	55	25	1	143
	Female	9	10	13	1	143	1	136	8	...	52	55	37	...	144
Hendricks	Total	24	24	29	5	293	1	288	7	2	112	110	70	2	294
	Male	9	11	18	2	153	1	150	6	1	67	61	24	1	153
	Female	15	13	11	3	141	...	138	6	1	45	49	46	1	141
Henry	Total	33	33	42	6	431	5	416	8	2	174	183	95	4	426
	Male	22	19	22	...	231	2	224	7	2	104	85	41	3	233
	Female	11	14	20	6	190	3	192	1	...	70	68	54	1	193
Howard	Total	31	28	32	8	424	11	417	17	1	184	173	77	1	435
	Male	18	14	12	3	235	5	231	8	1	113	101	26	...	240
	Female	13	14	20	5	189	6	186	9	...	71	72	51	1	186
Huntington	Total	35	36	43	5	355	...	335	30	...	123	159	84	...	365
	Male	19	17	16	2	176	...	161	15	...	63	87	27	...	176
	Female	16	19	27	3	189	...	174	15	...	60	72	57	...	189
Jackson	Total	14	20	24	4	340	3	319	23	1	156	111	74	2	343
	Male	4	6	13	1	163	3	152	13	1	89	49	27	1	166
	Female	10	14	11	3	177	...	167	10	...	67	62	47	1	177
Jasper	Total	12	8	10	1	143	...	125	18	...	68	45	30	...	143
	Male	6	4	6	1	87	...	79	8	...	48	27	12	...	87
	Female	3	4	4	...	56	...	46	10	...	20	18	18	...	56
Jay	Total	22	23	25	3	331	2	321	11	1	131	123	68	2	333
	Male	12	12	9	2	158	2	153	8	...	70	71	18	1	160
	Female	10	10	16	1	173	...	168	3	...	61	61	50	1	173
Jefferson	Total	25	26	42	3	307	15	291	26	5	128	104	98	4	322
	Male	14	15	15	1	154	7	144	14	3	67	63	28	3	161
	Female	11	11	26	2	153	8	147	12	2	61	41	58	1	161
Jennings	Total	26	14	25	5	215	3	198	18	2	72	86	58	2	218
	Male	9	6	13	2	98	3	95	7	...	35	51	15	1	103
	Female	17	8	12	3	116	...	103	11	2	37	35	43	1	116
Johnson	Total	25	24	26	6	263	1	259	5	...	92	114	53	...	264
	Male	14	14	15	4	139	1	133	3	...	40	65	26	...	140
	Female	11	10	11	2	124	...	121	3	...	43	49	23	...	124

TABLE No. 3—Continued.

COUNTIES.	Sex.		70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Knox...	Total.	26	17	26	4	...	...	493	9	469	27	6	273	149	77	3	502
	Male.	16	12	13	1	...	...	285	2	264	17	6	169	81	34	3	287
	Female.	10	5	13	3	...	...	208	7	205	10	...	104	68	43	...	215
Kosciusko...	Total.	34	31	32	3	...	...	342	...	329	11	2	128	142	72	...	342
	Male.	19	17	16	1	...	...	183	...	176	6	1	78	83	23	...	183
	Female.	15	14	16	2	...	...	159	...	153	5	1	50	59	50	...	159
Leflore...	Total.	24	22	17	2	...	...	213	...	204	7	2	91	80	42	...	213
	Male.	9	11	6	...	...	...	99	...	95	4	...	39	45	15	...	99
	Female.	15	11	11	2	...	...	114	...	109	3	2	52	35	27	...	114
Lake...	Total.	22	23	40	2	...	...	1,117	5	823	271	28	721	280	92	...	1,122
	Male.	10	19	19	...	...	...	680	4	469	190	25	429	198	39	...	684
	Female.	12	3	21	2	...	...	437	1	354	81	3	292	92	53	...	438
Laporte...	Total.	41	45	67	12	...	...	601	4	489	153	13	250	211	131	...	605
	Male.	25	28	35	6	...	...	366	4	262	98	10	167	140	52	...	370
	Female.	16	17	32	6	...	...	235	...	177	55	3	83	71	79	...	235
Lawrence...	Total.	30	24	27	6	...	...	454	3	348	8	1	223	151	76	...	457
	Male.	17	9	15	2	...	...	233	1	233	6	1	124	78	33	...	239
	Female.	13	15	12	4	...	...	216	2	216	2	...	99	73	43	...	218
Madison...	Total.	44	58	44	5	...	...	866	10	837	34	5	415	306	151	...	870
	Male.	25	31	26	4	...	...	472	6	459	16	3	243	160	73	...	478
	Female.	19	27	18	1	...	...	394	4	378	18	2	172	146	79	...	398
Marion...	Total.	215	201	206	27	...	...	3,392	496	3,383	470	35	1,516	1,464	841	...	3,888
	Male.	118	121	96	12	...	...	1,876	261	1,831	254	23	943	841	341	...	2,137
	Female.	99	80	110	15	...	...	1,516	235	1,553	196	13	618	623	500	...	1,751
Marshall...	Total.	24	27	28	2	...	...	308	1	287	19	3	132	113	63	...	309
	Male.	11	16	12	...	...	...	164	...	143	9	3	76	57	23	...	164
	Female.	13	11	16	2	...	...	164	1	145	10	...	57	56	41	...	165

Martin.....	Total.....	14	16	8	3	1	208	.....	202	6	.....	98	67	43	.....	206
	Male.....	6	10	4	1	.....	112	.....	109	3	.....	53	40	19	.....	112
	Female.....	8	6	4	2	1	96	.....	93	3	.....	45	27	24	.....	94
Miami.....	Total.....	29	24	28	3	1	400	4	376	23	5	173	166	64	1	404
	Male.....	11	18	15	3	1	218	1	207	9	9	107	87	25	.....	219
	Female.....	18	6	13	.....	.....	182	3	169	14	2	66	79	39	1	185
Monroe.....	Total.....	23	26	24	5	2	310	10	314	3	3	143	116	57	4	320
	Male.....	9	13	10	1	2	161	4	161	1	1	83	65	15	2	165
	Female.....	14	13	14	4	.....	149	6	153	2	2	60	51	42	2	155
Montgomery.....	Total.....	21	34	28	10	1	364	6	361	7	2	135	145	90	.....	370
	Male.....	10	22	16	3	1	198	1	196	2	2	81	75	43	.....	199
	Female.....	11	12	13	7	.....	166	5	166	5	.....	54	70	47	.....	171
Morgan.....	Total.....	20	28	26	3	2	310	5	308	4	3	151	107	55	2	315
	Male.....	11	15	11	1	2	184	2	180	3	3	91	70	23	2	186
	Female.....	9	13	15	2	.....	126	3	128	1	.....	60	37	32	.....	129
Newton.....	Total.....	16	7	12	.....	.....	102	.....	96	6	.....	45	33	24	.....	102
	Male.....	6	2	6	.....	.....	61	.....	48	3	.....	27	18	6	.....	51
	Female.....	10	5	6	.....	.....	51	.....	48	3	.....	18	15	18	.....	51
Noble.....	Total.....	21	28	27	3	2	325	.....	298	24	3	124	128	61	2	325
	Male.....	8	15	12	1	2	172	.....	155	14	3	73	76	21	2	172
	Female.....	13	11	15	2	.....	153	.....	143	10	.....	61	52	40	.....	153
Ohio.....	Total.....	6	3	7	2	.....	96	2	57	1	.....	24	23	11	.....	58
	Male.....	5	2	6	.....	.....	35	1	36	.....	.....	15	16	5	.....	36
	Female.....	1	1	1	2	.....	21	1	21	1	.....	9	7	6	.....	22
Orange.....	Total.....	18	11	15	1	1	236	1	229	6	2	103	101	33	.....	237
	Male.....	11	5	5	1	1	126	1	120	5	2	62	57	8	.....	127
	Female.....	7	6	10	.....	.....	110	.....	109	1	.....	41	44	25	.....	110
Owen.....	Total.....	16	12	16	3	.....	182	2	183	1	.....	60	64	40	.....	184
	Male.....	9	4	8	.....	.....	80	1	80	1	.....	26	41	14	.....	83
	Female.....	7	8	8	2	.....	82	1	83	.....	.....	34	23	26	.....	83
Parke.....	Total.....	16	26	25	3	.....	312	.....	301	9	2	157	95	57	2	312
	Male.....	16	18	14	.....	.....	153	.....	153	.....	.....	86	46	25	2	153
	Female.....	7	8	11	3	.....	154	.....	148	6	.....	72	49	32	1	154

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Perry.....	Total.....	10	15	14	.....	.....	192	5	175	21	1	107	60	29	1	197
	Male.....	6	9	11	.....	.....	116	2	106	13	1	63	40	16	1	120
	Female.....	4	6	3	.....	.....	74	3	69	8	.....	44	20	13	.....	77
Pike.....	Total.....	13	40	22	3	.....	319	3	311	10	1	187	108	60	.....	322
	Male.....	9	4	3	.....	.....	188	1	149	5	.....	96	46	22	.....	184
	Female.....	4	6	13	2	.....	166	2	162	5	1	71	59	38	.....	168
Porter.....	Total.....	17	21	21	2	.....	231	1	174	50	8	87	100	40	5	292
	Male.....	5	16	14	1	.....	132	1	83	32	8	46	65	17	5	133
	Female.....	12	5	7	1	.....	99	.....	91	18	.....	41	35	23	.....	99
Perry.....	Total.....	13	18	25	1	.....	264	19	245	25	2	132	90	57	4	283
	Male.....	7	11	8	.....	.....	145	14	145	13	1	83	48	25	3	189
	Female.....	6	7	17	1	.....	119	5	111	12	1	49	42	32	1	124
Pulaski.....	Total.....	14	14	7	3	.....	137	1	125	11	2	99	48	21	.....	138
	Male.....	4	6	5	1	.....	77	.....	69	7	1	47	24	6	.....	77
	Female.....	10	8	2	2	.....	60	1	56	4	1	22	24	15	.....	61
Putnam.....	Total.....	23	27	42	10	.....	266	4	262	8	.....	89	101	80	.....	270
	Male.....	14	14	18	4	.....	126	1	122	5	.....	43	53	31	.....	127
	Female.....	8	13	24	6	.....	140	3	140	3	.....	46	48	49	.....	143
Randolph.....	Total.....	24	34	33	2	.....	388	3	382	7	2	154	162	73	2	391
	Male.....	19	17	20	2	.....	199	1	192	6	2	92	30	30	1	200
	Female.....	15	17	13	.....	.....	189	2	190	1	.....	77	70	43	1	191
Ripley.....	Total.....	17	27	33	4	1	251	2	201	51	1	88	103	62	.....	253
	Male.....	10	9	18	3	.....	128	1	100	29	.....	46	61	22	.....	129
	Female.....	7	18	15	1	1	123	1	101	22	1	42	42	40	.....	124
Rush.....	Total.....	20	10	26	3	.....	204	5	202	6	1	82	71	56	.....	206
	Male.....	9	7	13	1	.....	110	4	104	5	1	48	41	21	.....	110
	Female.....	11	3	13	2	.....	94	.....	98	1	.....	34	30	35	.....	99

Scott.....	Total.....	10	6	12	2	122	.....	121	1	53	46	23	121	58	64
	Male.....	4	1	4	2	58	.....	57	1	29	29	5	29	58	64
	Female.....	6	5	8	.....	64	.....	64	.....	24	22	18	24	.....	.....
Shelby.....	Total.....	33	33	34	5	381	11	372	20	155	149	85	3	392	.....
	Male.....	18	16	20	3	209	8	203	8	97	89	30	2	215	.....
	Female.....	15	17	14	2	172	3	169	6	58	61	55	1	177	.....
Spencer.....	Total.....	20	28	21	.....	237	15	220	32	114	82	54	2	262	.....
	Male.....	13	14	9	.....	123	5	111	17	62	45	19	2	128	.....
	Female.....	7	14	12	.....	114	10	109	15	52	37	35	.....	124	.....
Starke.....	Total.....	12	16	5	1	144	1	125	18	74	42	28	1	145	.....
	Male.....	8	8	2	1	82	.....	69	11	43	24	14	1	82	.....
	Female.....	4	8	3	.....	62	1	56	7	31	18	14	.....	63	.....
Steuben.....	Total.....	25	21	18	3	183	1	179	7	60	82	50	2	194	.....
	Male.....	12	13	11	2	98	.....	89	4	26	48	22	2	98	.....
	Female.....	13	8	7	1	85	1	90	3	34	34	28	.....	96	.....
St. Joseph.....	Total.....	74	61	63	10	1,116	16	937	181	532	368	166	16	1,131	.....
	Male.....	40	27	34	6	633	9	529	9	332	216	65	9	642	.....
	Female.....	34	34	29	4	483	7	408	77	230	152	101	6	489	.....
Sullivan.....	Total.....	20	28	21	3	387	4	368	20	218	115	53	5	391	.....
	Male.....	8	14	9	1	195	3	183	13	122	57	16	3	198	.....
	Female.....	12	14	12	2	192	1	183	7	96	58	37	2	193	.....
Switzerland.....	Total.....	23	8	18	4	150	1	141	10	50	65	35	1	151	.....
	Male.....	14	7	6	2	79	.....	72	7	27	37	15	.....	79	.....
	Female.....	9	1	12	2	71	1	69	3	23	28	20	1	72	.....
Tippesawee.....	Total.....	65	52	59	10	609	12	594	103	298	238	173	2	631	.....
	Male.....	33	30	28	5	323	2	319	57	126	177	140	2	326	.....
	Female.....	32	22	26	9	286	10	285	46	82	101	113	.....	296	.....
Tipton.....	Total.....	17	13	20	1	236	.....	227	8	106	92	36	2	236	.....
	Male.....	9	6	14	1	120	.....	113	6	41	47	11	1	126	.....
	Female.....	8	7	6	.....	116	.....	114	2	45	45	25	1	116	.....
Union.....	Total.....	10	12	7	1	89	.....	85	4	31	41	16	1	89	.....
	Male.....	4	6	3	.....	37	.....	36	1	13	20	4	.....	37	.....
	Female.....	6	6	4	1	52	.....	49	3	18	21	12	.....	52	.....

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Vanderburgh	Total	73	59	66	11	1	1,046	135	956	205	20	515	416	241	9	1,181
	Male	39	25	35	4	1	560	67	499	113	16	365	250	94	8	627
Vermillion	Female	34	31	31	7	...	486	68	457	92	5	210	196	147	1	554
	Total	7	18	19	4	1	269	4	248	22	3	139	81	50	3	273
Vigo	Male	5	19	14	2	1	157	2	139	17	3	74	34	23	3	169
	Female	2	8	5	2	...	112	2	109	5	...	65	27	22	...	114
Wabash	Total	69	56	55	11	2	1,181	69	1,129	102	19	581	424	224	11	1,280
	Male	32	25	22	3	1	617	24	553	56	12	332	253	80	9	681
Warren	Female	37	31	33	8	1	564	35	546	46	7	249	191	154	2	599
	Total	27	34	34	8	1	347	...	327	17	3	123	151	68	5	347
Washington	Male	16	19	18	3	1	174	...	159	12	3	71	72	27	4	174
	Female	11	15	16	5	...	173	...	168	5	...	52	79	41	1	173
Wayne	Total	13	11	10	1	...	117	1	110	6	2	38	55	24	1	118
	Male	7	5	5	1	...	56	1	51	5	1	22	28	8	1	57
Warrick	Female	6	6	5	...	...	61	...	59	1	...	16	29	16	...	61
	Total	18	17	9	1	...	274	4	268	11	1	127	102	49	...	278
Washington	Male	9	5	4	1	...	128	2	123	6	1	67	47	16	...	130
	Female	9	12	5	...	...	146	2	143	5	...	60	55	33	...	148
Wayne	Total	20	20	25	7	1	228	...	222	4	2	73	91	63	1	228
	Male	11	9	5	1	...	116	...	112	3	1	40	53	23	...	116
Wells	Female	9	11	11	2	1	112	...	110	1	1	33	38	40	1	112
	Total	53	75	67	16	1	644	45	616	65	8	232	276	166	15	689
Wells	Male	24	37	31	6	1	310	25	296	34	5	121	149	53	12	335
	Female	29	38	36	10	...	334	20	320	31	3	111	127	113	3	354
Wells	Total	19	20	30	2	...	265	...	251	13	1	110	96	59	1	265
	Male	10	11	12	...	...	132	...	121	10	1	66	46	19	1	133
Wells	Female	9	9	18	2	...	133	...	130	3	...	44	49	40	...	133

White.....	17	25	21	4	.....	185	.....	183	21	1	53	85	45	1	185
Male.....	6	13	13	3	.....	97	.....	83	13	1	30	46	20	1	87
Female.....	11	12	8	1	.....	88	.....	80	8	.....	23	39	26	.....	88
Whitley.....	23	14	23	5	1	195	.....	186	8	1	72	74	47	2	195
Male.....	11	9	10	2	1	91	.....	88	3	.....	39	37	13	2	91
Female.....	12	5	13	3	.....	104	.....	98	5	1	33	37	34	.....	104
Total male.....	1,338	1,377	1,357	195	45	18,842	619	17,339	1,892	260	9,082	7,394	2,823	213	19,461
Total female.....	1,220	1,194	1,365	225	13	16,558	560	15,720	1,291	107	6,674	5,832	4,535	77	17,118
Grand total.....	2,558	2,571	2,722	420	58	35,400	1,179	33,059	3,183	367	15,756	13,226	7,358	289	36,579

TABLE No. 4.

Deaths in Indiana by Counties During the Year 1909.

STATE AND COUNTIES	Population, Estimated 3 1/4 Times School Census.	Total Deaths Reported for Year 1909.	Annual Death Rate Per 1,000 Population.	Stillbirths.	Important Ages.						Deaths from Important Causes.																	
					Under 1 Year.	1 to 4 inclusive.	5 to 9 inclusive.	10 to 14 inclusive.	15 to 19 inclusive.	20 Years and over.	Pulmonary Consumption.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrhoeal Dis- eases under 2.	Cerebro-Spinal Meningitis.	Influenza.	Purpural Septicæmia.	Cancer.	Violence.	Shipwreck.		
State of Indiana.....	2,733,550	36,579	13.3	2,099	7,839	2,365	748	606	1,059	10,810	3,643	836	875	325	23	151	186	378	2,638	1,841	110	504	174	1,838	2,543	865	1	5
Northern Counties..	920,585	11,848	12.8	715	2,728	716	235	187	306	3,641	982	227	230	88	4	64	73	105	847	629	36	121	50	667	865	1	1	
Adams.....	25,452	257	10.0	13	67	13	4	4	7	87	20	3	9	8	...	2	...	1	19	15	2	10	1	1	17	13	...	
Allen.....	89,579	1,056	11.7	68	219	44	27	29	24	279	103	19	16	8	...	4	6	1	78	36	6	9	1	1	71	94	1	
Benton.....	12,320	102	8.2	8	30	9	1	1	2	28	13	2	1	...	...	...	...	...	9	6	...	...	...	...	8	5	...
Blackford.....	16,222	195	12.0	4	49	15	7	4	5	45	15	6	3	1	...	3	2	5	22	12	...	...	...	1	11	14	...
Carroll.....	18,868	253	13.4	19	61	8	4	2	2	98	24	4	2	1	...	3	...	3	20	11	...	...	...	1	13	10	...
Cass.....	35,231	569	16.1	20	80	33	9	8	15	183	55	12	9	13	1	2	8	3	35	20	...	...	...	...	36	47	...
Dekalb.....	24,503	301	12.2	14	60	20	1	9	8	105	21	5	9	4	...	1	1	2	15	7	...	...	...	...	18	21	...
Elkhart.....	47,467	619	12.9	35	114	22	18	8	15	207	50	16	14	3	...	2	2	6	48	15	...	...	...	...	20	43	...
Fulton.....	17,689	206	11.6	12	42	10	3	5	5	76	15	1	6	...	...	...	...	3	13	6	...	...	...	...	11	14	...
Grant.....	57,239	760	13.2	45	150	26	12	11	18	309	63	9	14	1	...	...	1	3	52	14	...	...	...	...	37	49	...
Howard.....	29,837	435	14.5	32	96	30	7	8	16	133	36	14	6	6	...	...	2	...	31	22	...	...	...	...	23	28	...
Huntington.....	30,607	365	11.9	11	62	14	8	4	3	144	35	6	4	...	1	4	...	1	20	15	...	...	...	...	23	26	...
Jasper.....	14,469	143	9.8	8	43	7	2	1	7	44	11	2	2	...	...	...	...	7	16	6	...	...	...	...	12	11	...
Jay.....	27,156	333	12.2	21	74	18	7	4	15	100	34	5	14	1	...	2	...	...	19	24	...	...	...	...	1	16	...
Kosciusko.....	28,189	342	12.1	19	67	28	2	5	8	136	22	10	8	2	...	4	...	6	20	15	...	...	...	...	27	17	...
Lagrange.....	15,449	213	13.7	18	42	16	3	2	4	88	16	4	1	1	...	1	...	2	17	4	...	...	...	...	8	7	...
Lake.....	63,444	1,122	17.6	88	454	132	23	12	22	691	41	21	11	9	...	13	17	13	116	68	...	...	...	...	84	141	...
Laporte.....	56,007	995	10.8	34	139	30	12	7	11	203	59	17	9	11	...	2	...	4	35	23	...	...	...	...	43	51	...
Marshall.....	25,067	309	12.3	22	68	20	7	8	10	106	24	6	5	3	...	...	7	6	17	14	...	...	...	...	20	14	...

Miami.....	29,543	404	13.4	26	79	18	4	15	15	118	32	9	13	3	.....	1	5	27	15	1	3	4	17	29	...
Newton.....	10,612	102	9.6	8	26	8	.....	1	43	6	1	1	1	.....	.....	.....	.....	8	9	1	1	.....	4	7	...
Noble.....	22,627	325	14.3	21	68	17	4	1	103	24	6	3	2	1	1	3	5	16	8	1	5	2	22	26	...	
Porter.....	20,965	232	11.0	8	45	10	5	2	80	14	3	2	5	.....	.....	.....	.....	13	10	2	2	17	26	...	
Pulaski.....	15,928	138	8.6	13	46	9	2	2	45	8	1	2	.....	.....	.....	.....	.....	17	12	.....	1	3	7	6	...
Stark.....	12,404	145	11.6	10	44	6	4	1	35	10	3	5	1	.....	.....	.....	.....	11	8	1	3	2	14	14	...
Steuben.....	13,359	194	14.5	13	31	8	3	3	58	12	3	6	1	.....	.....	.....	.....	6	1	3	2	3	8	9	...
St. Joseph.....	72,387	1,131	15.6	78	333	78	21	14	33	265	106	27	26	5	1	10	13	8	74	90	1	9	6	46	80	...
Wabash.....	28,119	347	12.3	12	59	22	6	7	123	23	9	8	6	.....	.....	.....	.....	26	13	.....	1	1	23	18	...
Wells.....	24,234	265	10.9	14	63	26	10	4	85	27	5	3	.....	.....	.....	.....	.....	50	18	.....	7	1	14	12	...
White.....	18,480	185	10.0	6	24	8	5	2	84	17	2	3	.....	.....	.....	.....	.....	1	12	8	1	2	11	13	...
Whitley.....	16,922	195	11.5	15	33	10	3	2	86	18	6	5	1	.....	.....	.....	.....	17	7	.....	2	1	13	14	...
Central Counties.....	1,089,818	15,502	14.2	843	3,015	965	304	250	428	4,610	1,588	417	330	112	10	55	64	158	1,115	687	47	203	85	819	1,065	3
Bartholomew.....	26,338	337	12.7	19	61	16	9	1	6	124	28	15	11	.....	.....	.....	.....	16	9	3	6	1	22	14	...
Boone.....	24,475	313	12.7	20	61	14	6	3	9	128	30	8	3	1	.....	.....	.....	19	11	.....	6	1	11	10	...
Brown.....	10,034	101	10.0	5	19	4	1	3	1	38	16	1	1	.....	.....	.....	.....	8	2	.....	4	1	6	6	...
Clay.....	37,180	419	11.2	22	99	38	20	4	14	115	37	8	6	12	.....	.....	.....	25	35	.....	2	8	18	23	...
Clinton.....	27,478	364	13.2	20	84	31	5	9	8	102	38	8	5	28	28	1	6	2	21	25	...
Decatur.....	18,147	278	15.3	11	49	16	5	3	5	115	23	5	5	3	1	2	.....	16	7	2	7	2	14	12	...
Delaware.....	58,859	624	10.6	46	142	33	15	13	18	178	53	21	17	4	.....	.....	.....	52	28	2	5	8	28	40	...
Fayette.....	12,271	176	14.3	7	24	12	1	6	8	68	16	3	2	.....	.....	.....	.....	15	8	.....	2	5	11	15	...
Fountain.....	19,274	274	14.2	17	58	14	5	4	6	99	24	11	2	.....	.....	.....	.....	11	6	.....	3	8	13	17	...
Franklin.....	15,743	221	14.1	12	35	9	4	3	2	102	15	3	2	.....	.....	.....	.....	17	7	2	8	3	20	10	...
Hamilton.....	28,591	356	12.4	25	76	17	7	7	11	123	37	10	16	2	.....	.....	.....	23	17	.....	10	3	18	23	...
Hancock.....	19,211	272	14.1	14	52	18	7	5	10	89	29	11	10	2	.....	.....	.....	18	19	.....	4	3	13	15	...
Hendricks.....	20,447	294	14.3	8	50	21	5	2	9	110	41	9	7	1	.....	.....	.....	24	27	.....	1	4	10	13	...
Henry.....	23,569	426	18.0	30	99	23	6	6	11	132	31	10	6	2	.....	.....	.....	23	23	.....	1	5	26	30	...
Johnson.....	19,733	264	13.3	17	50	12	3	5	9	102	23	5	4	.....	.....	.....	.....	23	5	.....	1	1	17	15	...
Madison.....	71,141	876	12.3	58	218	75	33	21	23	190	83	33	16	14	1	16	15	28	63	44	4	9	4	39	54	...
Marion.....	268,773	3,888	15.0	199	689	204	76	43	121	877	463	110	59	23	.....	.....	.....	283	152	4	35	17	224	340	...
Monroe.....	23,254	320	13.7	24	69	25	7	6	10	107	45	11	14	1	.....	.....	.....	22	24	2	4	4	10	26	...
Montgomery.....	37,146	370	13.6	25	70	13	5	6	16	126	40	9	13	2	.....	.....	.....	17	15	.....	5	1	14	16	...
Morgan.....	22,451	315	14.0	19	70	23	4	6	6	106	34	9	13	.....	.....	.....	.....	28	15	.....	.....	.....	14	16	...
Owen.....	15,372	164	10.6	8	32	16	.....	1	6	58	25	1	1	.....	.....	.....	.....	13	9	.....	1	.....	7	4	...
Parke.....	22,876	312	13.6	13	36	31	8	12	5	131	28	12	17	3	.....	.....	.....	37	26	.....	5	3	12	23	...
Putnam.....	20,037	270	13.4	10	36	20	8	4	6	121	32	9	10	.....	.....	.....	.....	22	3	.....	3	2	11	13	...
Randolph.....	28,238	391	13.8	18	52	22	3	3	11	133	35	7	10	3	31	23	9	4	1	18	15	...
Rush.....	17,615	209	11.8	13	34	12	3	2	9	77	20	6	2	1	.....	.....	.....	15	6	.....	4	1	13	15	...

TABLE No 4—Continued.

STATE AND COUNTIES.	Population, Estimated 3 1/2 Times School Census.	Total Deaths Reported for Year 1909.	Annual Death Rate Per 1 000 Population.	Stillbirths.	Important Ages.					DISEASES FROM IMPORTANT CAUSES.																
					Under 1 Year.	1 to 4 inclusive.	5 to 9 inclusive.	10 to 14 inclusive.	15 to 19 inclusive.	65 Years and over.	Pulmonary Consumption.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrhoeal Dis- eases under 2.	Cerebro-Spinal Meningitis.	Influenza.	Puerperal Septicemia.	Cancer.	Violence.	Smallpox.
Shelby.....	25,347	392	15.4	22	73	28	8	13	7	136	45	10	5	8			2	1	27	14	4	4	2	24	16	
Tippecanoe.....	38,522	631	15.7	27	90	18	5	12	13	223	27	9	15	2		5	1	2	43	12	2	6	2	36	52	
Tipton.....	19,609	236	12.0	12	49	26	5	4	5	68	27	1	4	2		1	11	4	22	9	3	6	2	10	13	
Union.....	5,117	89	17.3	5	19				2	36	9	3	1					2	5	1				4	4	
Vermilion.....	16,856	273	16.1	11	66	46	5	4	2	70	12	7	2	7	1		3	3	31	19		4	1	9	27	
Vigo.....	79,450	1,250	15.7	80	266	93	26	24	44	266	130	33	48	10	5	3	3	23	77	78	5	8	2	55	136	
Warren.....	7,117	118	16.5	4	14	12		3	4	39	11	2	2	2				15	15	5			2	9	8	
Wayne.....	37,577	689	18.8	22	97	23	8	7	13	260	54	17	8			1		3	55	24	1	9	1	46	36	2
Southern Counties.....	722,147	9,229	12.7	541	2,096	694	219	169	325	2,559	1,073	192	315	125	9	32	19	115	666	525	27	180	39	352	593	1
Clark.....	33,840	492	14.5	30	105	34	14	8	17	142	58	10	19	12	1	4	1	1	22	30	3	12		26	23	
Crawford.....	14,056	174	12.3	8	34	10	8	2	9	51	30	6	12	4				8	6	5			7	3	7	
Deaies.....	32,935	344	10.4	24	94	28	9	6	17	87	44	9	12	1	3			11	20	19	1	10	2	9	23	
Dearborn.....	23,439	279	11.9	9	41	10	1	3	11	128	34	2	3	2				2	24	8	1	5	3	16	24	
Dubois.....	24,069	246	10.2	13	66	21	5	4	7	64	31	7	6	1				2	24	22		4	1	8	8	
Floyd.....	33,390	472	14.1	31	97	27	15	11	12	125	66	5	20	8				1	23	14	2	5	1	18	24	
Gibson.....	32,886	432	13.1	30	114	37	11	14	18	95	32	7	15	3	1	5		11	36	23	2	6	2	11	24	
Greene.....	40,265	501	12.4	24	145	57	17	8	17	117	56	10	19	10			8	6	44	46	4	8	1	18	40	1
Harrison.....	22,781	286	12.6	14	47	15	4	5	16	101	33	4	20	3				3	20	12		12	1	11	12	
Jackson.....	26,376	343	13.0	13	88	18	6	8	18	89	44	9	7	6	2			2	30	26		6		10	27	
Jefferson.....	21,969	332	14.6	15	54	21	2	3	9	120	26	4	5	1		1			27	15	2	7	1	11	23	
Jennings.....	16,079	219	13.5	13	44	16	2	3	5	82	16	10	2	2		1		3	14	4		12	2	12	18	
Knox.....	41,079	502	12.3	30	136	45	12	8	19	102	23	4	4	6	1		2	28	60	38	3	4	4	9	26	
Lawrence.....	21,533	437	14.3	23	109	44	6	5	7	108	34	16	17	2		1		1	31	31		8	1	17	37	
Martin.....	13,421	208	13.4	11	35	13	5	7	11	55	36	6	14	1				2	10	6		4		3	10	

TABLE No. 5.

Death Rates by Counties for the Year 1909.

STATE COUNTIES.	Population, Estimated 3 1/4 Times School Census.	Total Deaths Reported for Year 1909.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Consumption.	Other Forms of Tuberculosis.	Typhoid Fever	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrheal Dis- eases Under 5.	Cerebro-Spinal Meningitis.	Influenza.	Puerperal Epidemics.	Cancer.	Violence.	Smallpox.
State of Indiana.....	2,732,550	36,579	13.3	133.3	30.5	32.0	11.8	.8	5.5	5.7	13.8	96.5	67.3	4.0	18.4	6.3	66.8	93.0	.1
Northern Counties.....	920,585	11,848	12.8	106.6	24.6	24.9	9.5	.4	6.9	7.9	11.4	92.0	63.3	3.9	13.1	5.4	71.3	93.9	.1
Adams.....	25,452	257	10.0	78.5	11.7	35.3	.....	.....	7.8	.....	3.9	74.6	83.9	7.8	39.2	3.9	66.7	51.0	.....
Allen.....	89,579	1,056	11.7	114.9	21.2	17.8	8.9	.....	4.4	6.6	1.1	87.0	40.1	6.6	10.0	1.1	79.2	104.9	1.1
Benton.....	12,320	102	8.2	105.5	16.2	8.1	.....	.....	.....	.....	.....	73.0	48.7	.....	8.1	.....	24.3	40.5	.....
Blackford.....	16,232	185	12.0	92.4	36.9	18.4	6.1	.....	6.1	.....	36.9	135.6	73.9	.....	6.1	6.1	67.8	86.3	.....
Carroll.....	18,868	253	13.4	127.1	21.1	10.5	5.2	.....	15.8	10.5	15.8	105.9	53.2	.....	5.2	5.2	63.3	52.9	.....
Cass.....	35,231	569	16.1	156.1	34.0	25.5	36.8	2.8	5.6	22.7	8.5	99.3	56.7	.....	36.8	.....	102.1	133.4	.....
DeKalb.....	24,503	301	12.2	85.7	20.4	36.7	16.3	.....	4.0	4.0	8.1	61.2	28.5	.....	4.0	4.0	73.4	85.7	.....
Elkhart.....	47,667	619	12.9	104.8	33.5	29.3	4.1	.....	6.2	4.1	12.5	100.6	25.1	.....	4.1	2.0	8.3	60.8	.....
Fulton.....	17,689	205	11.6	84.7	5.6	33.9	.....	.....	5.6	.....	16.9	73.4	28.2	.....	11.3	.....	62.1	79.2	.....
Grant.....	57,239	760	13.2	110.0	15.7	24.4	1.7	.....	.....	1.7	5.2	90.8	24.4	.....	1.7	1.7	64.6	75.1	.....
Howard.....	29,837	435	14.5	120.6	46.9	20.1	20.1	.....	3.3	6.7	.....	103.8	73.7	.....	10.0	16.7	107.2	93.7	.....
Huntington.....	30,679	365	11.9	114.3	19.6	13.0	.....	3.2	13.0	.....	3.2	94.7	49.2	.....	16.3	3.2	75.1	84.9	.....
Jasper.....	14,469	143	9.8	76.0	13.8	13.8	.....	.....	.....	.....	48.3	110.5	41.4	.....	6.9	.....	82.9	76.0	.....
Jay.....	27,156	333	12.2	125.2	18.4	51.5	3.6	.....	7.3	.....	.....	69.9	88.3	.....	18.4	3.6	58.9	62.6	.....
Kosciusko.....	28,189	342	12.1	78.0	35.4	28.3	7.0	.....	14.1	.....	21.2	70.9	53.2	.....	17.7	7.0	96.7	60.3	.....
Lagrange.....	16,449	213	13.7	103.5	28.8	6.4	6.4	.....	6.4	25.8	12.9	110.0	25.8	.....	12.9	.....	51.7	45.3	.....
Lake.....	63,444	1,122	17.6	108.7	17.3	33.1	17.3	.....	20.4	26.7	20.4	182.8	280.0	.....	12.6	12.6	53.5	222.3	.....
Laporte.....	56,007	606	10.8	106.3	30.3	16.0	19.6	.....	3.5	.....	7.1	62.4	39.2	.....	5.3	3.5	78.7	91.0	.....
Marshall.....	26,067	369	12.3	95.7	23.9	19.9	11.9	.....	3.5	37.9	23.9	67.8	55.8	.....	35.9	7.9	79.7	55.8	.....

Miami.....	29,543	404	13.4	108.3	30.4	44.0	10.1		3.3	16.9	91.3	50.7	3.3	10.1	13.	57.5	98.1		
Newton.....	10,612	102	9.6	56.5	9.4						75.3	84.8		9.4		37.6	65.9		
Noble.....	22,627	325	14.3	106.0	26.5	13.2	4.4	4.4	4.4	22.0	70.7	35.3	4.4	22.0	8.8	97.2	110.4		
Porter.....	20,965	232	11.0	66.7	14.3	9.5	23.8		14.3		62.0	47.6		9.5	4.7	81.0	119.2		
Pulaski.....	15,928	138	8.6	50.2	6.2	12.6					108.7	76.5		6.2	12.5	43.9	31.3		
Starks.....	12,404	145	11.6	80.6	24.1	48.3	8.0		16.1	16.1	88.6	64.4	8.0		16.1	64.4	72.5		
Steuhan.....	13,359	194	14.5	89.8	32.4	37.4	7.4		11.0	11.0	37.4	44.9	7.4	22.4	14.9	104.7	104.7		
St. Joseph.....	72,387	1,131	15.6	146.4	37.2	35.9	6.9	1.3	13.8	16.5	102.2	124.3	1.3	12.4	8.2	63.5	110.5		
Wabash.....	38,119	347	12.3	81.7	32.0	28.4	21.3	10.6		17.7	92.4	46.2			3.5	57.7	64.0		
Wells.....	24,234	265	10.9	111.4	20.6	12.3		8.2	8.2	37.1	82.5	74.2		28.8	5.7	40.5			
White.....	18,490	185	10.0	91.9	10.8	16.2		10.8		5.4	64.9	43.2	5.4	10.8	5.4	59.4	64.9		
Whitley.....	16,922	196	11.5	106.3	35.4	29.5	5.9		11.8	5.9	100.4	41.3			76.8	82.7			
Central Counties.....	1,089,818	15,502	14.2	145.7	38.2	30.2	10.2	9	5.0	5.8	102.3	63.0	4.3	18.6	7.7	75.1	99.5	.2	
Bartholomew.....	26,338	337	12.7	106.3	56.9	41.7		3.7	7.5	3.7	60.7	34.1	11.3	23.7	3.7	83.5	53.1		
Boone.....	24,475	313	12.7	122.5	32.6	12.2	4.0			8.1	76.8	44.9		24.5	4.0	44.9	76.8		
Brown.....	10,034	101	10.0	159.4	9.9	9.9		9.9			79.7	19.9		30.8		49.8	59.7		
Clay.....	37,180	419	11.2	98.5	21.5	16.1	32.2	8.0		13.4	67.2	94.1	5.3	21.5	10.7	48.4	61.8		
Clinton.....	27,478	364	13.2	138.2	29.1	18.1		7.2			101.8	72.7	3.6	21.8	7.2	76.4	90.9		
Decatur.....	18,147	278	15.3	128.7	27.5	27.5	16.5	5.5	11.0		88.1	38.5	11.0	38.5	11.0	77.1	66.1		
Delaware.....	58,859	624	10.6	90.0	35.6	28.8	6.7	8.4		1.6	90.0	47.5	3.3	13.5	13.5	47.5	67.9		
Fayette.....	12,271	176	14.3	130.3	24.4	16.2				24.4	122.2	16.2	16.2	40.7	8.1	89.6	122.2		
Fountain.....	19,274	274	14.2	124.5	67.0	10.3	12.7		5.1	20.7	57.0	46.6	15.5	41.5	16.5	67.4	88.2	5.1	
Franklin.....	15,745	221	14.1	96.2	19.0	31.7				6.3	107.9	44.4	12.7	50.8		127.0	93.5		
Hamilton.....	28,591	356	12.4	129.4	34.9	55.9	6.9		13.9	6.9	80.4	59.4		34.9	10.4	82.9	76.9		
Hancock.....	19,211	272	14.1	160.9	57.2	57.2	10.4		5.2	6.2	93.6	62.4	20.8	15.6	20.8	67.6	78.0		
Hendricks.....	20,447	284	14.3	200.5	44.0	34.2	4.8	4.8		4.8	117.3	53.1	4.8	19.5	9.7	48.9	63.5		
Henry.....	22,569	326	18.0	131.5	44.4	38.1	8.4	8.4		8.4	97.5	57.5	4.2	21.2		110.3	127.2		
Johnson.....	19,763	264	13.3	111.4	25.3	20.2			5.0	30.4	116.5	25.3	5.0	5.0	5.0	86.1	76.0		
Madison.....	71,141	876	12.3	116.6	46.3	22.4	19.6	1.4	24.4	21.0	39.3	88.5	61.8	5.6	12.6	5.6	54.8	75.9	
Marion.....	248,773	3,868	15.0	175.9	42.5	21.6	10.8		5.4	9.6	109.3	58.7	1.5	13.5	6.5	86.5	123.6		
Monroe.....	22,244	320	13.7	172.0	38.7	60.2	4.3	4.3		4.3	94.6	103.2	8.6		17.2	81.7	111.8		
Montgomery.....	27,446	310	13.6	168.7	40.5	29.4					18.4	62.6	36.8		14.7	84.7	103.1		
Morgan.....	27,421	315	14.0	151.6	40.1	37.9	8.9			26.7	124.8	66.9		22.3	4.4	62.4	71.3		
Owen.....	15,372	164	10.6	162.6	6.5	6.5	6.5		19.5	45.5	84.5	58.5		6.5		45.5	26.0		
Parke.....	22,876	312	13.6	129.3	52.4	74.3	13.1	4.3	4.3	13.1	118.0	113.6	4.3	21.8	13.1	52.4	100.5		
Putnam.....	20,037	270	13.4	150.7	49.9	49.9	4.0			29.9	109.7	48.0	14.9	14.9	9.9	54.9	64.8		
Randolph.....	28,238	391	13.8	123.9	24.7	35.4	10.6		17.7	17.7	109.7	88.5		31.8	14.1	63.7	83.7		
Rush.....	17,615	269	11.8	113.5	34.0	11.3	5.9			5.6	85.1	34.0		22.7	5.6	68.1	85.1		

TABLE No. 5—Continued.

STATE COUNTIES.	Population Estimated 3½ Times School Census.	Total Deaths Reported for Year 1909.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Consumption	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrheal Dis- eases Under 5.	Cerebro-Spinal Meningitis.	Infan- tasmus.	Puerperal Septicæmia.	Cancer.	Violence.	Smallpox.
Shelby.....	25,347	392	15.4	169.6	39.4	19.7	31.5			7.8	3.9	106.6	55.2	15.7	15.7	7.8	94.6	63.1	
Tippecanoe.....	39,522	621	15.7	144.2	22.7	37.9	6.0		12.6	2.5	5.0	108.8	30.3	5.0	12.6	5.0	91.0	131.5	
Tipton.....	19,909	236	12.0	137.6	5.0	20.3	10.1		5.0	56.0	20.3	112.1	45.8	10.1	15.2	10.1	50.9	66.2	
Union.....	5,117	89	17.3	175.8	58.6	19.5					39.0	97.7	19.5	.....	117.2	.....	78.1	78.1	
Vermillion.....	16,856	273	16.1	71.1	41.5	11.8	41.5	5.9		17.7	17.7	183.9	112.7	.....	23.7	5.9	53.3	190.1	
Vigo.....	79,450	1,250	15.7	163.6	41.5	60.4	12.5	6.2	3.7	3.7	28.9	96.9	98.1	.....	10.0	8.8	69.2	171.1	
Warren.....	7,117	118	16.5	154.5	28.1	28.1						210.7	70.2	.....	28.1	126.4	112.4	.....
Wayne.....	36,577	689	18.8	147.6	46.4	21.8			2.7		8.2	150.3	65.6	2.7	24.6	2.7	125.7	98.4	5.4
Southern Counties.....	722,147	9,229	12.7	148.5	26.5	43.6	17.3	1.2	4.4	2.6	15.9	92.2	72.6	3.7	24.9	5.4	48.7	82.1	.1
Clark.....	33,840	492	14.5	171.3	29.5	56.1	35.4	2.9	11.8	2.9	2.9	65.0	88.6	8.8	35.4	.....	76.8	65.0	
Crawford.....	14,056	174	12.3	213.4	42.6	85.3	28.4			7.1		56.9	35.5	.....	49.8	7.1	21.3	49.8	
Davies.....	32,935	344	10.4	133.6	27.3	36.4	3.0		9.1		33.3	60.7	57.6	3.0	30.3	6.0	27.3	66.7	
Deaiborn.....	23,439	279	11.9	145.0	8.5	12.7	8.5				8.5	102.3	34.1	4.2	21.3	12.7	68.2	102.3	
Dubois.....	24,069	246	10.2	128.7	29.0	24.9	4.1				16.6	99.7	91.4	.....	16.6	4.1	33.2	33.2	
Floyd.....	33,990	472	14.1	197.6	14.9	59.8	23.9				2.9	68.8	41.9	5.9	14.9	2.9	53.9	101.8	
Gibson.....	32,896	432	13.1	188.1	21.3	46.6	9.1	3.0	15.2		33.4	109.4	69.9	6.0	18.2	6.0	33.4	72.9	
Greene.....	40,285	601	12.4	139.0	24.8	47.1	24.8			19.8	12.4	109.2	114.1	9.9	19.8	2.4	44.6	99.2	
Harrison.....	22,751	286	12.5	228.2	17.5	87.7	13.1				15.1	87.7	52.6	.....	52.6	4.3	48.2	52.6	2.4
Jackson.....	26,576	343	13.0	166.8	34.1	26.5	18.9	7.5			7.5	113.7	98.5	.....	22.7	.....	37.9	102.3	
Jefferson.....	21,989	322	14.6	118.3	18.2	22.7	4.5		4.5			122.9	63.2	9.1	31.8	4.5	50.0	104.6	
Jennings.....	16,079	218	13.5	99.5	24.8	12.4			6.2		18.6	87.0	24.8	.....	74.0	12.4	74.0	111.9	
Knox.....	41,079	502	12.2	80.3	24.2	34.0	14.6	2.4		4.8	68.1	121.7	92.5	7.3	9.7	9.7	21.9	63.2	
Lawrence.....	31,838	437	14.3	169.6	50.2	53.3	6.2		3.1			97.3	97.3	.....	25.1	8.1	19.4	84.8	
Martin.....	15,421	208	13.4	233.4	33.9	90.7	6.4				12.9	64.8	38.9	.....	35.9	19.4	19.4	64.8	

TABLE No. 6.

Annual Death Rates for Ten Years, 1900 to 1910, With Average of Cities of 5,000 Population and Over, Compared With Rural and State Rates.

	Popu- lation.	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	Av.
STATE.....	2,730,144	14.2	13.8	12.8	12.2	13.5	13.7	13.5	13.4	12.5	.....	.....
CITIES—												
Indianapolis.....	233,150	20.3	16.9	16.2	18.1	17.4	16.0	16.4	16.4	14.3	14.8	16.6
Evansville.....	64,442	15.2	14.5	11.2	14.7	14.9	14.4	15.1	13.8	14.4	15.0	14.3
Fort Wayne.....	56,304	13.1	14.8	14.1	14.8	14.0	13.9	16.3	15.7	14.6	13.7	14.5
Terre Haute.....	51,135	16.1	19.1	20.6	18.3	23.1	21.0	22.5	17.6	17.2	18.0	19.3
South Bend.....	43,599	16.1	15.0	14.6	19.2	15.9	17.1	16.8	16.1	16.3	17.3	16.4
Marion.....	24,181	16.9	15.8	15.5	17.5	16.6	14.0	13.6	11.5	9.6	11.0	14.2
Muncie.....	23,118	19.9	16.0	16.7	18.1	17.8	16.0	14.8	15.7	15.9	15.1	16.6
New Albany.....	23,005	17.4	18.0	17.4	16.6	18.1	18.1	16.1	17.6	15.8	14.2	16.9
Anderson.....	22,505	16.5	17.5	16.7	14.6	15.5	12.1	13.3	13.1	11.2	14.5	14.5
Lafayette.....	20,223	14.5	16.8	17.9	18.4	21.5	21.6	18.6	16.0	17.7	19.4	18.2
Michigan City.....	20,000	10.7	14.7	14.5	18.6	14.7	14.1	14.3	15.4	12.1	11.5	14.0
Hammond.....	19,995	10.5	14.8	18.1	19.1	15.4	15.2	17.9	17.2	14.6	13.8	15.6
Richmond.....	19,602	17.4	16.6	18.3	14.0	15.8	14.0	16.1	15.2	15.6	16.8	15.9
Elkhart.....	17,084	16.1	13.2	12.5	14.3	15.4	13.6	14.0	14.2	13.4	14.2	14.0
Logansport.....	16,730	15.4	17.5	15.1	15.9	17.6	17.1	16.0	14.8	18.4	16.6	16.4
Vincennes.....	13,947	12.5	19.2	17.8	15.1	22.2	20.7	20.0	18.5	18.6	15.4	18.0
Elwood.....	13,821	17.4	15.1	14.0	14.7	13.4	11.6	8.4	8.6	9.4	10.1	12.2
Kokomo.....	12,834	16.2	16.0	16.1	20.8	18.5	18.7	20.0	18.1	19.7	17.3	18.1
Jeffersonville.....	12,000	17.5	22.3	19.5	21.7	20.3	17.3	19.7	20.2	13.1	15.0	18.6
East Chicago.....	10,979	4.0	6.5	10.1	9.3	12.4	14.5	18.5	32.2	26.5	29.0	15.3
Peru.....	10,517	12.6	13.0	13.4	12.1	13.3	11.2	13.8	13.5	12.0	15.4	13.0
Laporte.....	10,004	13.1	15.4	13.7	17.3	18.2	17.5	20.7	19.8	15.0	15.9	16.6
Columbus.....	10,000	18.4	16.3	15.8	15.8	18.5	14.8	17.1	15.1	17.7	14.8	16.4
Mishawaka.....	9,989	11.4	10.5	13.8	17.0	19.2	24.3	21.4	21.9	13.0	12.5	16.6
Huntington.....	9,936	12.9	13.4	13.2	16.5	17.1	12.7	13.4	12.2	14.0	14.6	14.0
Washington.....	8,932	14.9	16.5	14.6	15.5	15.9	14.2	16.5	11.5	13.2	11.0	14.3
Brasil.....	8,827	7.8	10.0	14.1	8.0	20.0	12.5	12.8	16.9	13.3	13.0	11.0
Goshen.....	8,711	14.0	10.6	11.8	11.1	12.5	14.0	18.1	16.3	15.3	13.0	13.6
Frankfort.....	8,645	17.3	15.5	14.1	17.0	15.1	20.0	18.7	17.6	17.2	14.8	16.7
Wabash.....	8,592	11.3	11.0	13.8	9.8	14.3	12.7	13.0	12.0	14.6	13.5	12.6
Shelbyville.....	8,246	12.9	14.2	13.7	14.7	16.5	16.5	16.4	14.0	11.7	14.3	14.4
Madison.....	7,945	19.4	16.3	18.0	18.1	17.7	15.0	18.4	19.8	19.7	19.0	18.1
Bloomington.....	7,829	10.8	11.8	17.3	14.8	16.9	18.9	19.7	14.7	14.9	17.2	15.7
Bedford.....	7,672	10.5	10.9	12.4	11.3	19.5	18.1	18.0	19.2	16.8	14.8	15.1
Linton.....	6,737	.....	.....	8.6	9.7	12.5	11.8	11.7	10.4	10.6	11.2	8.6
Crawfordsville.....	6,492	17.1	16.4	17.4	13.9	20.5	20.0	20.3	22.1	19.7	22.4	18.9
Princeton.....	6,394	9.8	11.0	10.9	9.6	15.3	17.2	13.9	14.5	19.2	18.9	15.0
Connersville.....	6,114	12.7	16.0	13.2	13.9	17.6	14.8	15.3	15.3	18.6	16.6	15.4
Mt. Vernon.....	6,072	19.0	21.6	22.4	16.0	17.9	18.4	17.9	18.8	15.1	11.5	17.6
Whiting.....	6,037	.....	.....	.....	.....	11.4	10.3	14.1	14.7	13.5	14.0	7.8
Alexandria.....	6,030	12.3	16.1	13.9	14.1	11.4	4.4	6.9	7.9	9.9	12.1	10.9
Hartford City.....	5,789	8.8	12.2	12.0	11.1	13.0	12.0	8.8	11.9	9.8	11.2	11.0
Valparaiso.....	5,771	11.0	11.9	10.9	13.9	15.6	11.5	12.4	11.2	13.3	12.3	12.4
Seymour.....	5,593	14.2	13.9	12.9	13.0	16.1	15.8	15.6	16.6	21.6	20.0	15.9
Greensburg.....	5,288	15.8	20.3	17.6	16.9	18.5	16.2	21.2	14.7	17.5	20.0	17.8
Aurora.....	5,218	.....	.....	.....	.....	.....	.....	.....	.....	10.9	11.3	11.1
Average.....	916,034	14.6	15.3	15.3	15.4	16.8	15.8	16.4	15.6	13.4	15.1	15.3
COUNTRY.....	1,682,240	14.3	14.9	13.3	12.9	14.2	13.9	13.3	11.6	11.6	11.1	13.1

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Evyette.....	39	22	19	28	18	32	21	26	20	25	18	19	146	131	277	143	129	3	7	2098	718	0
Floyd.....	44	37	50	46	57	40	41	45	49	31	42	35	242	267	519	250	281	2	6	508	505	0	2	1
Fountain.....	47	35	24	32	33	28	34	48	35	25	30	38	221	106	417	221	196	.....	.....	401	405	0	1	.....
Franklin.....	24	30	18	19	26	24	18	17	21	31	23	27	139	139	378	139	139	261	270	0	4	2
Fulton.....	31	31	21	32	27	19	24	29	33	32	26	41	190	156	346	190	156	340	344	1	3

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STATE.....

Cities—

Indianapolis
Evansville...
Fort Wayne
Terre Haute
South Bend.

Marion....
Muncie....
New Albany
Anderson....
Lafayette..

Michigan Ci
Hammond..
Richmond..
Elkhart....
Logansport.

Vincennes..
Elwood....
Kokomo....
Jeffersonvill
East Chicag

Peru.....
Laporte....
Columbus..
Mishawaka
Huntington

Washington
Brazil.....
Gothen....
Frankfort..
Wabaah...

Shelbyville.
Madison..
Bloomington
Bedford..

Linton....
Crawfordsv
Princeton..
Connersvill

Mt. Vernon
Whiting...
Alexandria
Hartford ('

Valparaiso
Seymour..
Greensburg
Aurora....

Avera

COUNTRY...

TABLE A.

Births by Months, Color and Nationality of Parents, for the Year Ending December 31, 1909.

COUNTIES.	1909.												SEX.				COLOR.				NATIONALITY OF PARENTS.							
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	Males.	Females.	White.	Col'd.	American.	Foreign.	Not Re-ported.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.
Adams.....	56	47	52	39	42	37	38	52	46	46	33	40	285	243	528	285	243	285	243	496	504	23	17	2	36	7	2	36
Allen.....	128	160	164	113	126	120	123	125	120	122	142	123	791	775	1,566	787	772	787	772	1,316	1,409	189	122	36	4	4	36	4
Bartholomew.....	44	41	47	49	50	31	41	57	57	34	32	41	268	256	524	265	251	265	251	503	510	9	6	1	1	1	6	1
Benton.....	24	23	24	21	23	22	33	23	24	23	20	20	118	162	280	117	161	117	161	281	269	16	9	4	4	4	9	4
Blackford.....	31	29	22	35	32	26	31	27	27	29	31	34	185	169	354	185	169	185	169	338	345	9	6	4	4	4	6	4
Boone.....	49	53	55	36	47	38	41	40	38	42	39	35	275	238	513	274	236	274	236	500	504	2	2	5	1	1	5	1
Brown.....	18	20	16	12	16	11	9	24	12	18	17	11	81	103	184	81	103	81	103	178	178	1	1	1	1	1	1	1
Carroll.....	29	23	26	32	23	38	31	43	19	23	29	28	167	177	344	167	177	167	177	341	341	1	1	1	1	1	1	1
Cass.....	52	38	61	46	49	53	51	50	49	43	37	48	290	287	577	290	285	290	285	533	547	28	18	8	4	4	8	4
Clark.....	40	58	41	32	33	31	41	41	39	41	39	40	271	269	540	246	282	246	463	471	6	6	4	1	1	4	1	4
Clay.....	28	35	44	51	51	45	80	57	46	41	34	52	298	266	564	296	263	296	263	523	530	31	27	4	1	1	4	1
Clinton.....	47	45	40	47	44	46	38	42	44	37	39	49	271	237	508	271	236	271	236	494	486	1	1	1	1	1	1	1
Crawford.....	22	23	18	16	25	19	20	31	21	22	20	17	129	129	258	129	129	129	245	249	1	1	1	1	1	1	1	1
Davies.....	98	83	73	66	75	68	65	80	74	66	47	58	359	356	715	406	357	406	764	757	3	5	6	6	6	6	6	6
Dearborn.....	32	22	26	24	38	27	32	27	25	39	27	28	178	176	357	176	177	176	335	339	9	6	10	10	10	10	10	10
Decatur.....	29	27	43	41	29	37	29	37	38	27	29	24	182	208	390	181	205	181	205	381	383	1	1	1	1	1	1	1
DeKalb.....	47	58	38	35	27	27	35	45	44	43	28	34	215	211	426	215	211	215	401	405	16	16	2	2	2	2	2	2
DeWane.....	99	86	81	80	100	102	78	123	98	61	100	60	532	532	1,064	532	532	532	1,113	1,117	15	15	6	6	6	6	6	6
Dubois.....	52	41	46	44	46	38	37	46	48	56	38	32	294	238	532	294	238	294	529	529	11	11	1	1	1	1	1	1
Elkhart.....	68	90	75	89	67	62	77	86	103	83	89	101	512	476	988	511	476	511	910	913	64	63	4	4	4	4	4	4
Fayette.....	29	22	19	28	18	32	21	26	20	25	18	19	146	131	277	143	129	143	269	273	1	1	3	3	3	3	3	3
Floyd.....	46	27	50	46	57	40	41	45	49	31	42	35	262	267	519	262	267	262	508	505	9	9	6	6	6	6	6	6
Franklin.....	47	35	24	32	33	26	34	48	35	25	20	38	231	196	417	231	196	231	405	405	9	9	4	4	4	4	4	4
Franklin.....	24	30	16	10	26	24	18	17	21	31	23	27	139	139	278	139	139	139	265	270	5	5	2	2	2	2	2	2
Fulton.....	31	31	21	32	27	19	24	29	33	28	26	41	190	156	346	190	156	190	340	344	2	2	1	1	1	1	1	1

Neville	26	25	12	22	11	22	16	31	10	18	20	22	116	119	235	116	119	222	228	10	4	2	2
Noble	37	44	36	39	38	37	34	32	32	35	43	34	223	217	440	223	217	431	439	12	6	4	2
Ohio	11	6	2	8	4	11	2	8	6	6	3	6	44	28	27	42	42	68	72	1	1	3	3
Orange	27	30	45	31	24	28	40	36	42	26	34	35	204	193	398	203	193	393	392	2	1	1	3
Owen	24	25	26	15	30	12	18	30	23	29	19	18	135	144	279	134	142	273	275	3	3	2	2
Parke	40	32	41	26	27	26	39	34	29	42	36	36	215	193	408	213	193	387	391	16	14	3	1
Perry	47	26	31	37	32	31	24	27	46	37	35	24	183	203	387	183	203	368	377	11	6	4	...
Phil	53	51	46	30	49	46	33	40	42	36	33	37	255	241	494	251	240	483	491	3	3	6	...
Porter	30	33	22	33	28	24	21	28	39	31	34	34	206	179	357	179	178	297	311	66	42	3	...
Poway	42	32	35	30	31	35	39	40	37	37	28	34	206	205	410	197	202	403	400	2	5	3	2
Pulaski	10	17	20	13	6	24	13	17	25	22	11	21	100	99	199	100	99	187	194	9	3	1	...
Putnam	36	28	38	35	29	29	41	38	35	35	31	25	212	188	400	211	186	384	399	3	3	1	...
Randolph	57	55	57	56	56	57	50	47	54	50	51	45	316	319	635	313	316	622	629	8	8	1	...
Ripley	47	34	39	41	35	34	32	34	30	42	38	27	223	210	433	223	210	417	422	9	7	3	...
Rush	34	30	23	25	13	40	32	35	16	29	26	20	167	156	323	160	151	316	318	1	3	4	...
Scott	20	20	19	25	22	21	21	12	18	18	16	17	121	108	229	121	107	227	229	2	2	2	...
Shelby	41	36	33	41	33	42	51	38	45	40	42	46	237	231	458	214	245	472	479	1	4	10	...
Spencer	38	58	49	30	47	37	35	38	33	48	49	50	262	250	612	253	245	502	504	4	3	1	...
Stark	14	22	24	18	16	20	17	26	18	26	15	15	118	113	231	118	113	196	209	33	21	2	1
Streben	19	8	21	18	25	17	16	22	22	18	14	10	104	106	210	104	106	215	216	2	2	1	...
St. Joseph	190	185	188	162	161	187	158	193	197	183	170	153	1,069	1,068	2,127	1,062	1,055	1,173	1,299	913	805	19	1
Sullivan	79	61	82	79	79	73	88	70	87	72	73	73	488	422	110	487	421	521	543	67	63	11	3
Switzerland	22	19	23	19	17	13	8	18	19	10	14	10	103	97	198	103	94	134	146	4	4	2	...
Tippecanoe	35	30	35	35	35	35	55	52	32	40	40	39	312	297	629	310	293	381	389	40	25	3	1
Tipton	33	34	27	34	21	33	40	33	32	38	29	39	214	179	393	214	179	382	394	2	2	2	...
Union	8	11	10	12	11	8	9	7	5	13	6	9	56	53	109	55	59	104	105	...	...	...	...
Vanderburgh	157	119	122	100	114	112	122	123	109	118	128	112	731	718	1,449	683	683	1,341	1,403	71	32	32	...
Vermillion	41	31	39	30	33	44	42	37	37	34	39	42	216	202	421	216	201	263	303	113	111	1	...
Vigo	137	124	111	134	143	98	148	150	131	134	124	130	813	761	1,564	762	738	1,407	1,441	123	106	16	...
Wabash	42	37	48	42	40	30	41	38	31	50	53	54	251	255	506	251	255	491	498	8	3	2	...
Warrick	12	20	15	19	12	17	16	21	23	19	16	26	107	111	218	107	111	213	214	3	4	2	...
Washington	35	41	56	43	31	39	27	51	35	32	31	40	237	224	441	232	220	449	454	3	1	3	...
Wayne	33	15	29	33	30	32	35	31	37	32	30	24	173	188	361	173	188	355	357	...	...	...	...
Wells	42	37	48	42	40	30	41	38	31	50	53	54	251	255	506	251	255	491	498	8	3	2	...
White	77	73	77	68	68	69	68	78	62	61	51	71	411	412	823	388	387	776	793	34	22	6	1
Whitley	34	30	32	29	27	33	26	29	28	23	19	14	170	163	333	170	163	485	485	4	6	3	1
Whitely	34	30	28	12	28	34	27	16	28	23	19	14	161	136	287	161	136	310	319	18	11	3	1
Grand total	4,783	4,535	4,761	4,322	4,411	4,390	4,544	4,912	4,579	4,524	4,261	4,423	28,045	26,400	54,445	27,517	25,887	49,566	50,624	3,841	3,171	481	93

TABLE B.

Births, Number of Children Born to Each Mother, Grouped Ages of Parents, Still-Births, Plurality and Illegitimate Births, Year Ending December 31, 1909.

COUNTIES.	Total Births.	NUMBER OF CHILDREN BORN TO EACH MOTHER.												
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth.	Not Reported.
Adams.....	528	128	100	72	50	47	33	34	20	15	10	6	0	4
Allen.....	1,566	431	374	231	179	109	79	47	34	30	10	5	11	26
Bartholomew.....	524	142	110	87	56	35	33	27	9	9	4	3	2	7
Benton.....	280	81	62	45	27	20	14	11	5	5	4	2	3	7
Blackford.....	354	110	75	54	33	28	12	16	6	5	3	2	4	6
Boone.....	513	146	107	82	53	37	33	20	15	7	1	4	2	6
Brown.....	184	36	26	28	30	12	10	12	4	10	6	2	5	3
Carroll.....	344	93	91	55	36	18	15	17	6	7	1	4	4	1
Cass.....	577	187	125	78	70	31	35	13	12	6	6	8	5	9
Clark.....	480	139	93	65	54	35	24	25	12	6	5	5	5	9
Clay.....	564	157	120	72	58	41	30	26	20	16	10	3	3	8
Clinton.....	508	167	91	81	55	42	25	12	14	9	10	3	1	1
Crawford.....	254	76	41	35	29	22	15	11	6	2	2	2	5	9
Davies.....	200	137	81	63	41	34	41	44	23	16	15	7	8	9
Dearborn.....	357	85	85	56	42	34	22	10	8	4	4	2	2	3
Decatur.....	390	110	75	79	40	21	31	14	6	1	4	2	3	5
Delaware.....	426	126	95	82	37	27	23	9	9	7	5	1	1	4
Dubuque.....	1,142	305	288	182	145	82	43	20	18	11	11	8	8	18
Dubuque.....	522	128	99	70	68	47	29	20	18	11	5	2	3	9
Elkhart.....	988	303	252	148	95	67	44	25	15	10	11	6	7	6

Fayette.....	277	78	66	42	27	21	9	11	6	5	4	2	2	6
Floyd.....	619	141	114	82	66	46	23	8	14	3	6	2	8	6
Fountain.....	417	116	80	65	48	44	20	15	6	6	6	2	8	1
Franklin.....	278	62	60	46	31	23	19	13	11	4	6	6	6	6
Fulton.....	346	94	82	55	36	22	22	16	8	6	6	2	.....	.....
Gibson.....	746	204	142	113	82	66	46	26	21	14	13	8	5	6
Grant.....	1,014	296	224	162	111	78	45	32	29	17	6	4	9	11
Greene.....	843	202	206	115	113	82	47	26	31	19	5	7	7	3
Hamilton.....	522	160	123	90	46	29	21	23	16	3	4	6	9	3
Hancock.....	344	98	69	68	43	28	20	9	8	3	3	2	1	3
Harrison.....	454	120	90	71	45	39	29	19	14	10	8	2	4	3
Hendricks.....	402	95	91	74	45	39	19	15	9	7	3	2	.....	.....
Henry.....	512	197	136	97	52	36	27	17	9	7	2	6	2	12
Howard.....	573	171	134	99	52	36	18	16	14	5	3	2	.....	.....
Huntington.....	600	180	131	100	52	35	35	19	9	5	3	3	2	8
Jackson.....	603	152	117	94	65	53	49	25	14	8	7	2	6	9
Jasper.....	294	123	140	37	26	15	18	4	10	3	4	1	1	2
Jay.....	537	146	106	92	61	40	43	22	16	8	6	6	2	2
Jefferson.....	437	126	102	72	41	30	22	11	16	8	3	1	2	14
Jennings.....	354	98	61	41	42	37	22	19	12	5	7	2	3	5
Johnson.....	423	131	91	67	48	34	18	11	8	7	4	.....	2	2
Knox.....	978	246	190	172	108	76	55	39	28	20	11	5	6	14
Kosciusko.....	543	151	118	98	64	35	31	13	9	13	3	1	6	2
Lafayette.....	333	86	63	46	39	30	30	11	12	5	3	7	3	2
Lafayette.....	1,446	415	294	226	152	104	74	38	38	29	17	10	19	30
Laporte.....	889	252	203	130	100	69	43	33	21	16	4	5	5	8
Lewis.....	768	212	140	117	96	61	43	28	27	12	10	3	3	6
Madison.....	1,357	364	318	212	145	97	70	37	33	30	17	10	8	16
Marion.....	4,980	1,703	1,195	738	491	295	212	135	72	55	31	18	31	16
Marshall.....	491	160	94	61	51	35	19	10	11	10	10	5	3	2
Martin.....	314	80	61	42	33	29	28	18	8	7	4	2	2	.....
Miami.....	561	151	136	102	47	44	16	18	11	8	8	3	3	15
Monroe.....	516	125	108	83	61	33	29	24	19	13	5	3	6	7
Montgomery.....	618	175	157	91	55	35	39	25	14	11	7	.....	3	.....
Morgan.....	408	117	101	61	35	31	21	16	11	6	3	2	.....	4
Norton.....	235	66	63	33	24	25	9	8	7	4	.....	2	1	8
Noble.....	440	133	87	69	43	30	26	20	8	11	2	1	2	8
Ohio.....	72	23	14	6	9	6	4	2	1	1	1	3	1	.....
Orange.....	398	118	83	62	36	27	19	19	13	9	5	1	2	6
Owen.....	279	68	60	41	28	21	23	11	12	8	1	.....	2	4

TABLE B—Continued.

COUNTIES.	Total Births.	NUMBERS OF CHILDREN BORN TO EACH MOTHER.												
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth.	Not Reported
Parke.....	408	87	102	60	47	29	32	18	10	10	6	1	1	5
Perry.....	387	92	70	65	50	31	17	26	14	8	11	2	2	1
Pike.....	496	123	107	83	55	28	91	17	15	7	15	4	8	4
Porter.....	337	96	73	62	37	28	17	19	7	6	2	3	3	4
Posey.....	410	114	84	57	42	37	20	16	12	9	6	2	4	7
Putnam.....	199	57	36	26	14	16	13	11	10	5	6	2	1	2
Putnam.....	400	113	73	65	45	26	29	19	7	9	4	2	4	4
Randolph.....	635	190	160	87	69	40	37	22	18	12	9	3	1	4
Ripley.....	433	108	93	82	50	37	21	15	7	7	4	2	1	6
Rush.....	323	81	70	64	32	23	14	11	10	2	6	5	3	2
Scott.....	229	57	46	40	25	22	21	8	1	2	4	1	2	1
Shelby.....	458	120	111	82	54	24	32	15	8	5	7	1	7	14
Spencer.....	512	120	88	70	73	44	32	26	22	11	12	3	2	7
Stark.....	231	58	48	37	35	13	14	6	5	6	3	3	2	2
Stetson.....	210	66	56	25	16	20	6	10	5	1	2	1	1	2
St. Joseph.....	2,177	555	466	380	245	154	105	81	69	45	17	20	20	20
Sullivan.....	910	220	206	139	124	66	55	28	22	17	11	6	8	8
Switzerland.....	186	58	46	36	22	10	9	6	5	4	1	1	1	1
Tipton.....	629	186	128	99	71	53	30	12	7	14	10	4	2	13
Tippecanoe.....	383	113	83	62	32	32	21	20	8	7	5	3	4	3
Union.....	109	29	29	17	15	6	6	3	2	2	2	12	4	1
Vanderburgh.....	1,449	401	353	243	154	104	61	51	24	24	18	12	4	1
Vermillion.....	421	107	87	64	52	44	17	21	18	8	4	3	1	6
Vigo.....	1,564	485	380	256	166	106	86	36	34	20	10	8	8	6

Wabash.....	606	153	105	78	61	31	21	17	11	3	3	4	6	13
Warren.....	218	66	64	31	20	13	12	5	4	5	2	2	2	4
Warren.....	481	123	67	73	68	36	28	21	10	11	4	7	1	14
Washington.....	361	93	71	63	44	32	23	10	10	3	5	3	.....	4
Wayne.....	823	249	192	146	73	60	40	21	18	6	6	2	8	12
Wells.....	497	133	100	98	53	37	27	17	7	10	4	5	2	6
White.....	333	102	69	40	41	23	13	13	12	7	10	6	5	2
Whitley.....	287	96	63	40	25	19	11	5	8	6	2	2	1	9
Grand total.....	54,445	15,344	11,910	8,478	5,914	3,954	2,849	1,908	1,227	894	584	326	377	580

TABLE B—Continued.

Births, Number of Children Born to Each Mother, Grouped Ages of Parents, Still, Plurality and Illegitimate Births, Year Ending December 31, 1909.

COUNTIES.	GROUPED AGES OF PARENTS.												Still-births.		Plurality Births.		Illegitimate Births.		
	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		Not Reported.	Males.	Females.	Males.	Females.
	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Males.	Females.					
Adams.....	7	36	217	279	201	173	78	30	12	.....	2	.....	.....	4	3	5	4	7	.....
Allen.....	12	118	683	865	554	449	216	75	26	.....	2	.....	1	44	31	26	17	21	18
Bartholomew.....	4	61	220	258	188	171	82	25	17	.....	1	.....	.....	4	2	9	10	8	5
Benton.....	1	25	116	156	124	78	31	17	3	.....	.....	.....	.....	3	1	3	4	1	1
Blackford.....	3	48	170	193	116	86	43	19	6	.....	2	.....	.....	11	5	3	2	3	4
Boone.....	10	52	223	275	184	145	72	30	10	.....	1	.....	.....	7	5	14	5	5	3
Brown.....	3	18	62	92	70	56	33	13	6	.....	2	.....	.....	2	.....	1	4	5	5
Carroll.....	5	38	162	191	109	92	57	19	3	.....	1	.....	.....	5	2	12	5	1	3
Cass.....	6	55	259	312	216	161	60	29	13	.....	1	.....	.....	15	12	3	10	10	6
Clark.....	10	54	200	257	172	133	69	21	11	.....	1	.....	.....	10	8	9	6	7	7
Clay.....	9	62	239	303	206	164	85	24	10	.....	.....	.....	.....	9	5	11	8	7	5
Clinton.....	7	65	249	283	176	121	56	27	9	.....	1	.....	.....	1	5	5	2	14	10
Crawford.....	4	36	115	124	81	70	33	16	7	.....	.....	.....	.....	10	4	3	4	4	6
Dearborn.....	6	76	342	396	269	240	128	40	17	.....	1	.....	1	8	1	12	11	4	5
Dearborn.....	3	31	141	173	129	116	64	29	11	.....	.....	.....	.....	6	6	4	4	1	5
Deatur.....	10	44	173	207	132	112	59	22	10	.....	1	.....	.....	1	3	8	4	3	5
Detailb.....	5	41	200	246	148	111	55	20	8	.....	.....	.....	.....	5	1	4	5	6	4
Delaware.....	24	142	584	633	405	308	137	45	21	.....	2	.....	1	10	3	20	16	10	6
Dubuque.....	2	35	200	261	205	173	91	41	9	.....	2	.....	.....	3	2	8	2	12	8
Exeter.....	9	96	457	541	346	281	134	57	23	.....	1	.....	.....	7	3	16	13	14	6

3	24	116	145	109	90	36	13	5	1	3	4	2	5	3	2	4	2
8	145	220	271	211	155	60	30	12	1	3	4	1	3	2	3	4	2
8	64	220	271	211	155	60	30	12	1	3	4	1	3	2	3	4	2
9	64	220	271	211	155	60	30	12	1	3	4	1	3	2	3	4	2
2	14	83	136	111	95	60	25	8	1	7	4	4	2	6	3	2	4
7	36	170	198	113	101	46	10	5	1	3	7	6	2	3	2	4	4
12	79	469	409	243	202	106	43	29	1	19	7	13	7	5	11	18	7
21	126	493	562	344	273	140	37	17	1	14	4	18	15	13	9	9	9
9	118	376	304	215	115	44	17	17	2	5	7	8	14	10	5	6	6
12	68	245	484	168	137	73	29	12	3	3	2	11	3	2	5	4	2
8	49	157	188	126	80	36	14	8	2	5	4	6	6	4	4	2	2
5	41	178	230	175	143	66	31	17	2	11	6	7	4	6	3	5	3
3	26	162	222	169	110	67	19	11	1	5	2	4	7	4	2	3	3
11	78	306	344	190	146	76	23	6	5	9	5	17	9	6	6	7	4
10	69	278	335	269	140	51	15	9	2	8	6	10	11	10	6	4	4
10	39	253	331	198	179	80	19	18	2	4	5	5	5	7	3	4	4
6	68	250	299	210	190	105	31	12	4	7	2	7	5	7	9	8	3
1	17	96	131	73	52	37	18	1	3	3	7	4	5	2	7	4	9
9	65	240	291	263	162	81	32	14	1	10	6	10	5	5	2	3	4
10	61	193	220	147	124	65	22	11	1	4	1	8	11	5	6	4	4
5	143	173	112	111	74	74	24	10	2	5	8	6	6	5	5	7	2
7	50	198	231	140	121	57	13	9	1	9	6	5	3	3	1	0	0
9	117	430	534	352	271	130	42	28	2	16	4	13	10	10	18	9	9
11	68	238	297	186	146	83	25	11	2	8	1	11	5	9	3	3	0
2	21	130	191	142	98	49	24	5	1	3	3	12	3	2	2	2	2
5	80	633	889	550	378	206	70	23	1	10	9	27	23	18	20	4	6
3	68	398	516	341	260	104	23	15	1	16	11	27	17	11	5	3	2
18	105	364	413	249	213	96	5	12	2	9	11	22	5	5	13	5	12
33	178	632	745	464	260	180	57	24	4	13	10	22	7	7	11	18	8
64	2,768	1,964	1,437	862	562	368	87	36	10	48	14	107	42	48	103	102	6
6	231	266	155	140	77	77	163	11	1	8	3	10	7	3	1	1	1
5	36	126	163	122	92	43	14	7	1	4	3	4	2	2	9	7	1
11	47	238	301	216	171	98	34	15	1	7	4	7	4	4	2	5	2
7	75	235	266	170	147	74	34	16	6	7	7	8	6	3	2	5	11
15	64	266	332	224	162	88	28	11	5	4	7	13	7	5	3	4	3
3	40	187	239	156	106	46	13	3	1	7	6	9	9	10	3	2	2
2	22	96	124	102	78	28	9	2	1	3	1	3	4	2	1	1	1
9	45	187	238	164	126	64	26	11	2	2	4	8	8	3	3	2	2
6	29	32	32	22	26	14	8	3	1	3	9	11	7	3	2	1	1
4	47	157	217	142	98	64	25	26	1	4	9	11	3	2	2	3	4
4	39	121	119	100	101	38	15	10	1	3	15	16	9	3	2	2	4
Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.	Oran.

Wabash.....	7	59	234	272	185	144	59	24	8	3	5	2	5	3	5	5	2	1	2	6
Warren.....	1	29	107	116	172	62	27	8	7	7	4	3	2	2	3	7	4	1	1	2
Warwick.....	12	48	170	231	171	146	82	27	11	2	8	4	9	7	3	4	2	2	6	3
Washington.....	2	38	140	184	140	109	55	24	14	1	7	3	1	1	2	4	2	2	3	3
Wayne.....	14	88	370	449	292	245	111	28	16	2	11	6	11	6	7	7	8	8	4	4
Wells.....	10	57	238	276	172	134	56	23	9	2	7	2	10	2	5	6	7	7	1	1
Wells.....	7	40	119	156	121	101	65	31	13	2	4	3	4	1	2	2	2	2	1	1
Whitely.....	5	32	140	172	94	60	45	19	5	1	5	1	8	2	4	2	3	3	1	1
Grand total.....	731	5,752	23,818	29,657	19,763	15,439	7,543	2,601	1,160	4	131	8	734	385	906	692	596	527	498	493

TABLE C.
Marriages by Months, Color, Nationality Year Ending December 31, 1909.

COUNTIES.	1909.												NATIONALITY.				Total.
													Color.		American.		Not Reported.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	White.	Colored.	Groom.	Bride.	
Adams.....	12	19	16	20	14	23	12	14	21	14	19	18	202	...	176	176	302
Allen.....	48	49	33	71	63	63	28	66	66	75	74	76	712	10	670	685	723
Bartholomew.....	16	6	10	10	15	15	11	25	30	20	18	39	220	2	208	208	222
Benton.....	12	13	10	8	5	8	4	5	6	12	8	10	100	1	98	100	101
Blackford.....	10	13	14	13	10	8	14	5	17	16	14	15	154	1	145	148	155
Boone.....	16	12	16	13	8	18	13	7	23	16	13	31	186	...	186	186	186
Brown.....	11	3	6	2	6	1	...	7	7	3	10	10	61	...	63	56	61
Carroll.....	9	12	16	14	11	9	12	9	19	16	10	17	154	...	153	152	154
Cass.....	25	31	19	30	9	45	28	30	27	34	40	25	342	1	325	334	343
Clark.....	72	100	61	86	94	94	70	92	105	113	121	109	907	210	1,094	1,098	1,117
Clay.....	20	15	16	25	15	30	18	21	19	32	29	27	265	2	245	267	267
Clinton.....	17	20	29	13	14	13	14	22	21	20	22	48	252	1	253	252	253
Crawford.....	13	10	8	8	5	3	8	6	12	8	10	12	102	...	61	68	102
Darwin.....	22	21	16	14	21	23	18	13	19	20	19	32	235	3	237	238	238
Dearborn.....	13	19	10	18	7	16	9	13	20	19	21	11	176	...	167	172	176
Deatur.....	7	11	8	8	14	7	12	19	17	22	19	17	154	2	154	156	156
Delalb.....	17	12	14	18	21	18	18	7	30	21	24	23	223	4	219	220	223
Delaware.....	33	41	28	47	32	42	68	43	37	65	46	53	530	15	535	535	545
Dubois.....	10	9	4	18	20	22	12	1	9	19	23	5	152	...	152	152	152
Elkhart.....	25	28	33	39	26	46	30	35	44	34	52	49	449	2	446	449	451

Eyette.....	17	11	5	17	4	9	11	12	5	23	1	4	118	1	119	119	10	5		119
Foy.....	15	20	11	27	25	30	18	16	25	31	27	14	251	21	262	267	10	5		272
Fountain.....	15	21	11	19	17	12	16	15	24	19	18	12	207		202	206	6	1		272
Franklin.....	7	11	8	10	7	7	7	14	11	11	14	12	112		55	65	44	11	13	112
Fulton.....	9	11	14	11	6	5	11	10	10	11	14	17	129		129	129				129
Gibson.....	17	17	17	18	11	16	10	23	24	18	17	14	188	14	200	202	2			202
Grant.....	32	44	60	28	30	33	36	33	35	46	41	53	443	18	445	461	13	9	3	461
Graves.....	27	16	24	25	21	24	22	27	35	30	32	41	323	1	305	311	19	13		324
Hamlin.....	21	19	17	29	11	11	21	10	21	31	21	243	7	247	249	3	1			250
Hancock.....	14	13	6	13	10	16	12	12	16	19	18	19	167	1	166	167	2	1		168
Harrison.....	26	7	16	11	15	10	10	10	25	12	28	15	183	2	185	185				185
Hendricks.....	8	13	6	11	6	6	10	9	15	24	13	26	143		143	142	1			143
Henry.....	16	28	18	20	9	23	26	13	24	31	28	26	261	1	262	262				262
Howard.....	20	23	14	30	33	27	32	32	37	33	36	41	333	15	340	343	8	5		345
Huntington.....	18	13	16	26	16	24	23	14	31	23	19	34	257		257	257				257
Jackson.....	19	15	17	19	8	20	20	24	26	28	21	25	240	2	237	241	5	1		242
Jasper.....	10	10	5	12	9	3	10	4	4	16	7	6	96		84	84	12	12		245
Jay.....	15	21	24	25	9	19	14	18	18	12	29	33	236	1	230	264	5	1	2	265
Jefferson.....	13	17	15	22	11	19	17	18	14	25	18	38	220	7	225	225	2	2		267
Jennings.....	11	14	14	13	6	11	10	8	9	9	15	13	130	3	132	130	1	3		133
Johnson.....	12	18	14	10	14	12	5	8	15	17	19	22	162	4	166	166				166
Knox.....	27	37	37	30	37	56	41	34	54	52	44	53	502	10	500	504	11	8	1	512
Kosciusko.....	15	22	24	21	11	18	18	14	24	28	26	24	245		245	245	4			245
Lagrange.....	10	11	11	8	2	18	7	7	6	12	13	23	128		126	126	2	2		128
Lake.....	123	111	77	122	90	149	92	108	112	111	130	107	1,308	24	851	885	481	447		1,333
Laporte.....	32	34	20	32	31	76	33	60	56	47	59	34	514		405	437	108	87	1	514
Lawrence.....	20	25	24	15	27	27	28	22	30	38	29	26	299	2	298	297	7	4	1	302
Madison.....	41	34	82	53	23	53	41	67	85	85	85	86	675	16	670	673	17	4	1	691
Marion.....	181	158	168	221	198	367	181	174	296	249	283	272	2,411	271	2,383	2,399	170	154	269	2,713
Marshall.....	14	17	19	18	11	22	15	16	16	29	20	17	204		204	204				204
Martin.....	10	11	17	18	4	1	6	14	14	7	13	16	123		122	123	1			123
Miami.....	25	23	21	22	18	21	17	23	29	18	33	30	279	1	279	279	1	1		280
Monroe.....	13	4	10	9	10	12	11	15	23	14	17	22	170		170	170				170
Montgomery.....	21	21	26	16	15	22	11	27	32	21	24	32	264	9	271	272	2	1		273
Morgan.....	16	16	14	15	13	16	17	16	35	21	14	17	212		212	212				212
Newton.....	16	6	7	6	3	4	6	5	7	8	8	14	88	1	82	85	7	4		89
Noble.....	16	13	12	13	9	25	8	14	22	26	23	21	202		198	200	4	2		202
Ohio.....	6	3	4	6	1	1	1	4	5	5	3	6	43	1	36	36		8		44
Orange.....	16	11	13	11	11	11	16	17	12	12	16	19	159	6	165	165				165
Owen.....	16	9	6	17	6	9	9	11	11	2	12	15	123		123	123				123

TABLE C—Continued.

COUNTIES.	1900.												Color.		NATIONALITY.						Total.		
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	White.	Colored.	American.		Foreign.		Not Reported.				
															Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.		Grooms.	Brides.
Barre.....	11	11	16	11	12	9	14	10	17	18	19	19	166	1	160	133	7	2	.....	32	167	
Berkshire.....	10	7	14	16	14	11	13	14	11	22	21	11	161	3	163	163	1	1	.....	.....	164
Berkshire.....	14	14	23	19	17	9	8	15	17	16	19	17	175	3	178	178	.....	.....	.....	.....	178
Berkshire.....	15	7	8	11	19	16	8	13	21	18	14	17	167	16	149	167	18	8	.....	2	167	
Berkshire.....	19	20	23	18	14	23	19	23	16	21	26	24	230	16	245	246	1	.....	.....	.....	246
Berkshire.....	6	12	13	.....	7	8	4	4	10	15	13	12	104	.....	102	103	2	1	.....	.....	104
Berkshire.....	13	11	10	12	14	9	10	17	15	24	12	21	166	2	168	167	.....	.....	.....	.....	168
Berkshire.....	19	19	17	29	12	24	25	18	17	24	16	25	240	5	245	245	.....	.....	.....	.....	245
Berkshire.....	9	10	9	8	5	10	8	9	6	16	17	12	119	.....	119	119	.....	.....	.....	.....	119
Berkshire.....	7	12	6	11	5	6	8	14	5	16	12	7	107	2	109	109	.....	.....	.....	.....	109
Berkshire.....	9	4	13	2	4	4	9	6	6	9	10	19	95	.....	95	95	.....	.....	.....	.....	95
Berkshire.....	15	24	11	18	10	12	32	17	14	40	23	34	242	8	248	248	2	2	.....	.....	250
Berkshire.....	18	21	17	20	21	26	16	19	30	42	28	28	266	18	276	276	.....	8	.....	8	284
Berkshire.....	8	8	5	6	4	7	9	4	8	8	8	8	81	1	52	56	30	26	.....	.....	82
Berkshire.....	9	7	11	16	5	4	16	10	15	11	18	11	133	.....	132	133	1	.....	.....	.....	133
Berkshire.....	53	36	49	47	84	93	43	63	57	75	68	99	759	8	590	614	177	151	.....	2	767	
Berkshire.....	28	19	19	24	17	17	15	22	38	24	26	25	273	1	266	263	18	11	.....	.....	274
Berkshire.....	5	9	2	5	.....	1	4	3	4	6	4	8	51	.....	51	51	.....	.....	.....	.....	51
Berkshire.....	26	38	27	29	14	56	21	28	27	42	45	43	389	7	377	387	19	9	.....	.....	396
Berkshire.....	18	18	21	15	12	8	8	9	19	20	26	18	192	.....	155	155	.....	1	37	36	192
Berkshire.....	2	4	2	7	1	2	1	7	4	6	2	11	46	8	49	49	.....	.....	.....	.....	49
Berkshire.....	75	80	71	66	82	92	80	65	83	84	78	107	871	92	893	918	70	48	.....	.....	903
Berkshire.....	20	8	3	7	9	10	9	14	6	9	15	16	134	1	95	93	30	18	.....	14	135	
Berkshire.....	61	76	55	62	66	111	78	92	95	109	86	80	921	50	916	939	48	28	7	1	971		
Berkshire.....	17	20	21	21	19	26	16	13	16	24	26	22	233	2	236	239	5	1	.....	.....	240

Warren.....	14	7	10	8	2	11	5	3	6	9	3	11	89	87	96	2	3	.....	.....	89
Warrick.....	15	8	10	14	14	12	14	23	14	12	23	14	184	187	187	.....	.....	.....	.....	187
Washington.....	8	10	14	11	5	16	4	16	14	9	16	20	139	139	139	.....	.....	.....	.....	139
Wayne.....	26	27	20	26	24	39	24	31	41	31	34	41	333	345	346	7	7	1	.....	333
Wells.....	11	7	10	17	13	18	18	15	15	22	20	20	186	183	184	2	1	1	1	186
White.....	15	24	9	8	9	15	4	11	14	9	12	21	151	148	144	2	5	.....	.....	151
Whitely.....	13	6	7	17	11	7	20	10	9	15	18	12	145	141	145	4	.....	.....	.....	145
Grand total.....	1,987	1,954	1,707	2,104	1,763	2,531	1,872	1,970	2,484	2,643	2,576	2,705	25,522	24,477	24,736	1,610	1,315	390	405	26,456

TABLE D.
Marriages, Grouped Ages, for the Year Ending December 31, 1909.

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Total.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Adams.....	4	87	149	104	40	10	9	1	24	11	10	3	2	2	4	10	202		
Allen.....	9	132	468	434	161	101	44	31	8	4	4	1	2	2	1	1	733		
Bartholomew.....	6	57	149	128	45	23	9	10	8	4	2	1	2	2	1	1	232		
Benton.....	2	21	73	60	14	17	7	7	4	2	1	1	2	2	1	1	101		
Blackford.....	4	59	109	70	25	13	5	8	6	5	4	4	2	2	1	1	155		
Boone.....	9	66	139	87	27	20	4	5	2	4	3	2	1	1	1	2	186		
Brown.....	2	22	40	25	4	3	1	1	2	2	4	4	2	2	9	8	61		
Carroll.....	2	34	107	90	26	19	7	3	7	6	3	2	2	2	2	2	154		
Cass.....	10	78	235	207	55	32	25	14	11	8	5	2	2	2	2	4	348		
Clark.....	18	447	818	519	193	115	23	18	12	12	7	1	3	3	2	2	1,117		
Clay.....	4	78	192	149	35	17	16	15	14	5	4	2	1	1	1	1	267		
Clinton.....	10	69	174	144	40	22	12	10	8	4	3	3	1	1	4	8	263		
Crawford.....	41	37	30	34	17	17	18	10	6	3	4	6	1	1	10	2	102		
Daviess.....	6	56	172	152	34	13	14	12	6	5	6	0	0	0	6	6	238		
Dearborn.....	21	111	111	114	40	30	15	8	6	6	4	4	2	2	1	1	176		
Dodge.....	4	37	106	90	30	17	5	6	5	4	4	1	2	2	4	3	156		
Dekalb.....	9	64	124	117	32	21	15	10	7	4	3	3	2	2	2	2	233		
Delaware.....	13	148	373	289	79	45	45	23	22	14	10	1	4	4	1	2	545		
Dubuque.....	6	40	121	86	15	12	16	8	1	8	7	7	1	1	4	4	132		
Elkhart.....	7	89	314	284	82	45	22	18	15	8	7	7	4	4	1	1	451		
Essex.....	5	32	80	69	17	11	10	4	5	4	2	2	2	2	2	1	119		
Fayette.....	12	59	169	150	50	29	24	18	10	4	3	1	2	2	2	1	272		
Franklin.....	7	51	131	118	43	19	14	14	8	4	7	4	1	1	1	1	207		
Hamilton.....	3	14	72	77	26	11	9	5	3	3	3	1	1	1	1	1	112		
Pulaski.....	3	30	87	73	13	12	7	6	5	5	6	4	2	2	1	1	139		

Gibson.....	5	44	149	115	31	16	7	7	4	3	6	1	5	1	1	3	18	202
Grant.....	19	135	299	234	75	51	30	20	14	12	16	6	4	4	4	1	2	461
Greene.....	10	108	230	176	49	24	22	8	5	3	4	4	3	3	3	1	1	334
Hamilton.....	12	90	171	151	32	22	15	10	14	8	3	3	1	1	1	1	1	250
Hancock.....	6	43	109	89	29	16	11	13	7	8	5	4	4	1	1	1	1	168
Harrison.....	4	41	114	98	24	12	15	11	9	5	3	1	1	1	1	15	17	185
Hendricks.....	5	34	94	74	25	12	12	7	4	3	3	1	1	1	1	2	13	143
Henry.....	11	72	175	137	34	23	18	11	11	10	6	7	5	2	1	3	3	262
Howard.....	11	104	244	186	60	35	18	9	19	11	4	4	3	2	2	1	1	363
Huntington.....	7	49	194	177	30	15	13	6	8	8	3	1	1	1	1	1	1	348
Jackson.....	9	58	164	143	38	26	18	6	10	4	2	2	1	1	1	1	2	242
Jasper.....	3	20	59	59	25	13	3	3	3	5	1	1	1	1	1	1	1	96
Jay.....	5	75	169	126	34	19	14	7	7	6	6	4	4	1	1	1	4	237
Jefferson.....	18	83	128	109	49	14	13	7	9	10	8	4	4	1	1	1	1	237
Jennings.....	3	28	83	86	29	12	13	2	1	3	4	2	2	1	1	1	1	133
Johnson.....	6	45	117	93	28	17	7	6	4	3	2	2	1	1	1	1	1	166
Knot.....	12	145	340	284	108	45	28	21	15	9	7	4	4	1	1	1	1	512
Kosciusko.....	6	56	176	149	35	24	15	9	8	3	5	2	2	1	1	1	1	245
Lagrange.....	10	40	88	67	13	10	6	6	6	3	4	2	1	1	1	1	1	128
Lake.....	3	253	675	630	380	316	188	89	70	14	13	13	3	1	1	3	3	1,332
Laporte.....	6	84	349	314	86	69	37	27	28	15	5	5	2	2	1	1	1	514
Lawrence.....	13	105	196	150	82	28	22	6	9	6	2	3	3	3	2	3	5	302
Madison.....	36	217	439	346	108	65	41	13	27	13	10	8	6	1	1	6	7	691
Marion.....	36	496	1,853	1,673	499	352	209	118	64	37	35	13	12	4	1	2	19	2,712
Marshall.....	6	66	139	102	35	15	10	12	6	3	3	4	3	3	3	2	2	204
Martin.....	3	38	86	70	21	7	6	3	7	4	3	3	1	1	1	1	1	123
Miami.....	7	73	171	151	42	25	23	17	11	3	3	1	2	2	1	1	1	250
Monroe.....	7	58	95	76	40	28	15	9	4	2	3	1	2	1	1	1	1	170
Montgomery.....	9	71	193	164	40	24	21	9	4	4	6	3	3	1	1	2	2	273
Morgan.....	10	73	122	85	37	22	9	11	5	4	6	1	2	1	1	5	5	213
Morton.....	10	17	68	64	16	8	2	5	3	3	3	4	3	3	3	3	3	59
Noble.....	6	56	135	116	28	16	12	7	1	4	10	2	1	1	1	9	1	202
Ohio.....	1	14	33	26	8	3	1	1	4	2	1	1	1	1	1	1	1	44
Orange.....	5	48	120	98	23	11	12	4	5	2	2	2	1	1	1	1	1	155
Owen.....	7	45	80	55	17	9	10	9	6	2	3	1	1	1	1	1	1	123
Parke.....	3	42	108	87	26	18	17	9	4	5	7	4	1	1	1	1	2	167
Perry.....	4	47	111	99	26	12	14	4	7	2	2	1	1	1	1	1	1	164
Pike.....	12	64	116	87	27	12	10	8	7	3	4	2	2	1	1	1	1	178
Porter.....	1	26	93	95	47	28	18	9	3	5	3	3	3	1	1	1	1	167
Posey.....	4	87	170	120	47	27	17	10	4	4	4	4	1	1	1	1	1	246
Pulaski.....	3	34	75	63	22	3	2	4	2	4	4	4	1	1	1	1	1	104
Ransom.....	7	47	114	90	25	12	14	12	4	4	4	4	3	3	1	1	1	153
Randolph.....	8	76	192	139	21	16	13	8	7	7	4	3	2	1	1	1	1	245

TABLE D—Continued.

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Total.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Ripley.....	2	27	77	73	30	12	4	4	6	2	2	1	1	1	1	1	1	1	119
Rush.....	3	25	68	63	25	14	8	4	3	2	2	1	1	1	1	1	1	1	109
Scott.....	4	23	63	60	9	11	6	7	7	1	4	3	3	1	1	1	1	1	100
Shelby.....	13	60	171	143	30	21	21	16	11	7	4	1	1	1	1	1	1	1	96
Spencer.....	4	76	203	161	35	30	14	2	3	5	3	3	1	1	1	1	1	1	260
Stark.....	2	35	57	32	11	6	5	2	2	1	2	1	1	1	1	1	1	1	82
Steuben.....	6	36	89	74	30	9	10	8	3	1	3	2	1	1	1	1	1	1	133
St. Joseph.....	25	203	524	431	137	79	51	34	17	15	10	2	2	1	1	1	1	1	767
Sullivan.....	7	108	199	132	47	27	11	7	9	2	2	1	1	1	1	1	1	1	274
Switzerland.....	1	12	30	27	11	5	5	3	2	1	2	2	1	1	1	1	1	1	51
Tipecanoe.....	4	49	234	246	87	62	32	22	17	9	9	5	2	1	1	1	1	1	396
Tipton.....	12	53	122	89	14	7	2	5	4	2	2	1	1	1	1	1	1	1	192
Union.....	6	20	32	24	8	4	3	1	1	1	1	1	1	1	1	1	1	1	49
Vanderburgh.....	12	179	686	584	202	119	72	48	20	12	13	4	6	1	1	1	1	1	936
Vermilion.....	4	45	85	60	23	13	10	5	2	1	1	1	1	1	1	1	1	1	126
Vigo.....	49	280	646	503	160	118	63	44	30	20	18	4	4	1	1	1	1	1	971
Walsh.....	17	70	149	123	41	22	24	13	9	1	2	2	3	2	1	1	1	1	240
Warren.....	9	31	57	44	14	6	4	2	2	1	2	1	1	1	1	1	1	1	89
Warren.....	9	31	57	44	14	6	4	2	2	1	2	1	1	1	1	1	1	1	89
Washington.....	4	48	93	67	21	15	11	6	3	2	2	1	1	1	1	1	1	1	139
Wayne.....	8	76	224	188	64	54	28	16	18	11	7	6	2	1	1	1	1	1	353
Wells.....	10	48	131	120	29	10	9	5	2	1	2	1	1	1	1	1	1	1	186
White.....	2	36	110	94	24	14	4	1	3	1	1	1	1	1	1	1	1	1	151
Whitley.....	4	32	105	94	20	12	11	1	4	5	1	1	1	1	1	1	1	1	145
Grand total.....	773	5,844	17,668	14,664	4,660	2,922	1,802	1,118	827	485	410	180	128	33	14	174	210	26,455	

TABLE No. 7.

Deaths by Occupations, Months and Ages for the Year Ending December 31, 1909.

OCCUPATIONS.	Sex	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Actors and actresses.....	Males.....				1			1					
	Females.....		1	1				1					
Agents.....	Males.....	3	9	10	11	9	7	6	11	4	13	6	8
	Females.....												
Architects.....	Males.....			2	2					1			
	Females.....												
Artists and authors.....	Males.....												3
	Females.....												
Auctioneers.....	Males.....		1										
	Females.....												
Bakers and confectioners.....	Males.....	4	3	3	1	3	2	3		2	4	1	1
	Females.....											1	
Bankers.....	Males.....			1	2	1	4	1		4	3	3	2
	Females.....												
Barbers.....	Males.....	3	10	9	9	4	14	5	8	5	2	9	10
	Females.....												
Bartenders.....	Males.....	3	11	11	10	11	14	2	6	4	4	2	7
	Females.....					1		1			1		1
Basket makers.....	Males.....												
	Females.....												
Blacksmiths.....	Males.....	10	9	11	14	13	9	11	9	11	10	9	15
	Females.....												
Bookbinders.....	Males.....		1						1	1			
	Females.....												
Bookkeepers.....	Males.....	4	3	4	5	2	4	4	3	5	3	1	4
	Females.....	2		1	1		3	2	1		2		
Brewers, distillers, etc.....	Males.....	2	1	1	3	2		1	1			2	1
	Females.....												
Brickmakers.....	Males.....	1										1	
	Females.....												
Builders and contractors.....	Males.....	10	11	7	5	2	9	6	3	5	4	5	10
	Females.....												
Butchers.....	Males.....	5	4	3	3	10	4	10	5	5	5	6	3
	Females.....												

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Cabinet makers.....	Males.....	3	6	3	2	6	3	1	6	4	2	7	4
Carpenters.....	Males.....	32	29	41	37	41	16	26	22	23	42	28	36
Carriage and wagon makers.....	Males.....	3	3	1	5	1	4	3	2	2	2	.....	.....
Cashiers.....	Males.....	.....	.....	.....	1	.....	1	.....	.....	1	.....	.....	.....
.....	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chemists and druggists.....	Males.....	2	.....	2	7	6	5	4	4	2	3	7	3
Cigar makers.....	Males.....	1	1	3	4	4	2	1	.....	3	2	.....	4
Clergymen.....	Males.....	7	8	5	4	4	4	4	7	10	9	3	6
.....	Females.....	.....	.....	1	.....	.....	1	.....	.....	1	1	.....	.....
Clerks.....	Males.....	15	14	18	14	17	15	13	13	6	13	10	9
.....	Females.....	1	3	1	5	3	1	3	1	1	2	1	2
Collectors.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Commercial travelers.....	Males.....	7	5	4	8	6	3	3	4	6	5	3	5
Cooks.....	Males.....	3	.....	2	5	3	3	2	2	.....	.....	3	1
.....	Females.....	.....	.....	4	1	.....	.....	1	.....	1	1	1	2
Coopers.....	Males.....	10	3	3	4	5	2	6	4	1	3	2	7
Dairymen.....	Males.....	1	3	.....	2	2	1	.....	1	.....	1	.....	.....
.....	Females.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dentists.....	Males.....	1	2	2	.....	.....	2	1	.....	1	1	2	.....
.....	Females.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Draftsmen.....	Males.....	.....	.....	.....	.....	.....	.....	2	3	.....	.....	.....	.....
Editors, reporters, etc.....	Males.....	2	3	3	1	1	2	1	.....	1	1	1	1
Electricians.....	Males.....	2	2	5	3	3	4	3	3	6	3	4	.....
Electric railway employes.....	Males.....	1	1	2	2	.....	2	2	3	3	1	.....	.....

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Lumbermen.....	Males	2	3	5	4	3	3	1	3	4	2	.....	2
Machinists.....	Males	9	14	11	20	6	14	14	19	7	8	6	12
Mail service.....	Males	1	3	2	1	4	4	4	1	2	5	3	2
Managers and superintendents.....	Males	6	5	2	5	5	4	3	7	3	8	4	4
	Females	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manufacturers.....	Males	2	4	4	2	5	6	2	4	7	3	2	2
Marble and stone cutters.....	Males	3	1	1	5	4	3	3	4	2	1	4	1
Masons.....	Males	6	8	8	9	4	6	10	8	5	7	3	8
Mechanics.....	Males	7	2	3	2	5	1	3	7	1	2	6	4
Merchants.....	Males	35	22	42	36	34	29	23	35	26	29	34	33
	Females	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
Messengers.....	Males	.....	.....	1	.....	.....	.....	1	1	.....	.....	.....	.....
Millers.....	Males	1	6	7	3	3	6	4	3	3	6	2	2
Milliners and seamstresses.....	Males	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Females	6	5	6	4	4	1	5	4	6	10	6	2
Masons.....	Males	12	18	17	18	13	21	5	11	16	17	18	20
Moulders and iron workers.....	Males	5	5	12	8	7	4	7	5	3	6	5	10
Musicians.....	Males	3	2	1	1	3	2	.....	3	2	1	1	1
	Females	.....	.....	2	.....	.....	1	.....	3	.....	.....	.....	.....
Nurses.....	Males	1	1	2	4	1	.....	1	1	.....	.....	.....	1
	Females	.....	.....	.....	.....	.....	.....	1	1	4	1	.....	3
Oil workers.....	Males	2	2	3	3	.....	2	1	1	2	.....	2	2
Opticians.....	Males	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Packers.....	Males	.....	1	1	1	.....	.....	.....	.....	1	3	.....	.....

Painters and decorators.....	Males.....	16	12	13	16	15	12	11	11	9	12	15	9
Peddlers.....	Males.....	1	1	1	1	1	1	1	1	1	1	1	1
Photographers.....	Males.....	2	2	2	1	1	1	1	1	1	1	1	1
Physicians.....	Males.....	14	7	5	6	10	7	9	4	6	7	11	12
	Females.....							3					
Plasterers.....	Males.....	2	2	3	2	4	2	1	2	2	2	4	1
Plumbers.....	Males.....	1	5	3	1	2	1	2	1	4	4	1	3
Police-men.....	Males.....	1	2	4	1	2	4	1	2	5	1	1	6
Potters.....	Males.....	1									2		
Printers and pressmen.....	Males.....	1	1	1	5	3	4	3	7			5	2
	Females.....					1							
Professors and teachers.....	Males.....	7		2	11	3	6	3	3	3	3	4	3
	Females.....	7	3	2	5	6	4	8	8	6	9	11	4
Public officials.....	Males.....	4	4	3				4	2	3	1	3	1
Sailors.....	Males.....			1		4	1	1	1	1		1	2
Salesmen and saleswomen.....	Males.....	4	3	7	6	4	5	6	3	6	6	3	5
	Females.....					1				1			1
Servants.....	Males.....	6	5	4	9	6	3	3	4	5	6	2	6
	Females.....	28	42	41	54	26	34	37	35	43	23	27	39
Shoemakers.....	Males.....	8	4	10	10	4	9	4	6	8	3	5	6
Steam railway employes.....	Males.....	23	14	26	27	20	19	10	17	18	14	15	23
Stenographers.....	Males.....		1	2			1	1	2			1	2
	Females.....	1		1		1	1	2	1	1	1		
Stock dealers.....	Males.....	5	2	5	5	4	1	2	1	3	1	2	3
Students.....	Males.....	8	7	9	9	7	8	12	6	6	7	5	8
	Females.....	8	7	5	7	9	6	7	6	7	7	5	5
Tailors.....	Males.....	7	6	5	3	10	6	3	2	3	3	2	4
	Females.....		1	1									
Tanners and curriers.....	Males.....	1						1			1		

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Teamsters.....	Males.....	6	5	10	10	7	12	12	9	9	10	11	15
Telegraph and telephone operators.....	Males.....	5	.....	3	1	1	3	2	3	5	.....	2	3
	Females.....	2	.....	1	1	1	1	1	1	1	.....	.....	3
Tinners.....	Males.....	2	1	3	3	1	3	2	4	3	6	4	4
Undertakers.....	Males.....	.....	4	2	1	1	.....	1	1	3	.....	1	1
Upholsters.....	Males.....	1	1	1	2	.....	.....	.....	.....	.....	.....	.....	1
Veterinary surgeons.....	Males.....	.....	1	2	1	1	.....	.....	.....	.....	.....	.....	.....
Volunteer soldiers and pensioners.....	Males.....	3	.....	9	4	6	.....	4	4	2	3	5	5
Watchmakers and jewelers.....	Males.....	5	.....	3	.....	2	1	1	2	2	3	1	5
	Females.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Weavers.....	Males.....	1	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
	Females.....	.....	.....	.....	.....	2	.....	1	.....	.....	.....	.....	.....
No occupation.....	Males.....	152	162	170	201	183	145	143	175	145	185	153	161
	Females.....	321	312	448	429	370	317	349	368	305	331	312	314
Totals.....	Males.....	1,084	1,216	1,292	1,292	1,195	1,011	1,014	1,085	981	1,086	995	1,101
	Females.....	1,005	920	1,220	1,165	857	860	962	995	897	968	911	995
Total, 15 years and over.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under 15.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stillbirths.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand total.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE No. 7—Continued.

Deaths by Occupations, Months and Ages, for the Year Ending December 31, 1909.

OCCUPATIONS.	Sex.	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	Un- known.	Totals.	
		to 20	to 25	to 30	to 35	to 40	to 45	to 50	to 55	to 60	to 65	to 70	to 75	to 80	to 85	to 90		Males.	Females.
Actors and actresses.	Males. Females.					1			1									2	3
Agents.	Males.	1	3	3	4	5	6	9	7	13	12	15	8	3	7			96	
Architects.	Males.				1			1		2					1			5	
Artists and authors.	Male.						2			1								3	
Auctioneers.	Males.														1			1	
Bakers and confectioners.	Males. Females.	2	2	2			4	3	2	2	1	1	5	3	1			27	1
Bankers.	Males.		1	1			5	1	2		5	1	3	1		1		21	
Barbers.	Males.	2	9	6	10	8	10	11	8	5	2	7	5	4		1		88	
Bartenders.	Males.		2	8	12	16	14	12	5	6	7	2	1					85	
Basket makers.	Males.		1				1						1	1				4	
Blacksmiths.	Males.	2	4	4	7	3	5	5	11	13	11	14	15	27	9	1		131	
Bookbinders.	Males.				1	1		1										3	
Bookkeepers.	Males. Females.	1	7	10	4	5		1	3	2	4		3		2	1		42	13
Brewers, distillers, etc.	Males.			2		1	2	3		3	2					1		14	
Brickmakers.	Males.				1									1				2	
Builders and contractors.	Males.		2	2	2	2	6	8	8	7	7	5		4	14	1		77	

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	15 to 20		20 to 25		25 to 30		30 to 35		35 to 40		40 to 45		45 to 50		50 to 55		55 to 60		60 to 65		65 to 70		70 to 75		75 to 80		80 to 90		90 and over.		Un- known.	Totals.		
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.				
Butchers.	Males.....	1		4		3		7		3		7		2		8		5		10		4		3		2		4					63		
	Males.....	1		1		4				1		1		4		6		4		2		2		9		5		6		1			47		
	Males.....	1		5		8		5		13		21		22		25		39		33		41		48		57		57		3			378		
	Males.....			4		1				1				2				1		4		3		3		5		11					35		
	Males.....					1										1				1												3		1	
Chemists and druggists.	Males.....																																		
	Males.....	1		3		1		5		2		2		6		6		3		6		7		2		1							45		
	Males.....					1		3		2				4				2		1		1		2		4		4		1			25		
	Males.....					1		1		4				2		2		5		11		7		15		12		6					71		
	Females.....			1		1										1				1													4		
Clerks.	Males.....	19		24		18		17		14		8		15		10		7		5		12		1		5		2					157		
	Females.....	4		8		4		2		1		2		1		1		1				1											24		
Collectors.	Males.....									1					1																		2		
Commercial travelers.	Males.....			1		4		7		5		3		2		8		5		7		7		8		2							59		
	Males.....					1		3		2		3		4		1		1		2		1		3		3		1					25		
	Females.....			2		1		1		1		1		1		1		1		1		1		1		1		1					11		
Coopers.	Males.....			1		1		1		1		2				2		1		4		3		17		8		7		2			50		
Dairymen.	Males.....			1								1		1		1		1		1		1		2		1		1					11		
Dentists.	Males.....																																		
	Females.....							1				4								2		1		1		3							12		
Draftsmen.	Males.....																																	5	

Editors, reporters, etc.....	Males.....	2	5	12	6	2	2	2	2	2	4	1	1	1	1	16
Electricians.....	Males.....	2	5	12	6	2	4	2	3	1	1	1	1	1	1	37
Electric railway employees.....	Males.....	3	6	5	1	1	1	4	1	1	1	1	1	1	1	22
Elevator operators.....	Males.....	1	2	8	6	4	7	11	7	13	9	8	10	2	3	1
Engineers and firemen—railroad.....	Males.....	5	2	2	4	4	4	3	6	8	5	6	4	4	2	91
Engineers and firemen—stationary.....	Males.....	4	8	13	7	9	9	8	5	8	4	3	1	2	1	55
Factory hands.....	Males.....	9	3	2	2	2	2	2	2	2	2	2	2	2	2	81
Farmers.....	Males.....	119	127	114	91	118	149	183	253	293	391	581	613	650	683	14
Firemen—city.....	Males.....	1	3	2	2	2	2	3	1	2	2	2	2	2	2	4,497
Gardeners and florists.....	Males.....	3	3	3	5	2	2	3	3	1	6	3	8	3	4	20
Glass workers.....	Males.....	5	6	14	6	6	9	3	4	3	2	2	3	1	1	43
Government employees.....	Males.....	1	1	1	1	1	1	1	1	1	2	1	1	1	1	64
Hair dressers.....	Males.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
Harness makers and saddlers.....	Males.....	1	1	1	1	1	3	3	2	2	10	5	4	3	3	1
Hotel and boarding house keepers.....	Males.....	1	1	1	2	1	1	3	1	1	1	3	3	3	1	29
Housewives.....	Females.....	98	309	445	431	436	409	432	501	470	578	709	732	648	618	18
Hunters and fishermen.....	Males.....	1	1	1	1	1	2	1	1	1	2	2	1	1	1	6
Inspectors.....	Males.....	1	1	1	5	3	3	2	3	3	2	2	1	1	1	6
Janitors.....	Males.....	1	1	1	1	1	1	1	7	5	2	4	5	1	1	17
Laborers.....	Males.....	96	175	154	148	139	136	129	188	166	143	142	108	96	70	25
Laundresses and laundresses.....	Males.....	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1,874
Lawyers.....	Males.....	3	3	2	2	4	3	2	7	7	10	10	6	6	5	3
																15
																66

Oil workers.....	Males.....	2	4	.....	3	3	2	1	.....	3	1	.....	1	.....	20
Optic ans.....	Males.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	2
Packers.....	Males.....	.....	1	.....	.....	.....	1	.....	.....	2	2	.....	1	.....	7
Painters and decorators.....	Males.....	1	3	8	12	17	15	11	16	19	12	16	10	7	151
Peddlers.....	Males.....	.....	.....	.....	.....	.....	1	2	1	1	1	.....	.....	1	8
Photographers.....	Males.....	.....	.....	.....	.....	.....	1	1	.....	2	.....	2	2	1	9
Physicians.....	Males.....	1	1	.....	.....	5	3	1	10	8	16	12	13	14	98
Physicians.....	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	3
Plasterers.....	Males.....	.....	3	.....	.....	1	3	2	.....	2	2	4	2	5	1
Plumbers.....	Males.....	3	2	4	3	2	2	2	2	4	3	.....	.....	2	27
Police men.....	Males.....	.....	1	1	2	2	4	5	6	3	3	1	1	1	30
Potters.....	Males.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	1	3
Printers and pressmen.....	Males.....	2	10	3	2	3	2	.....	.....	.....	2	2	2	1	32
Printers and pressmen.....	Females.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Professors and teachers.....	Males.....	2	4	8	5	3	.....	3	6	4	5	4	1	2	49
Professors and teachers.....	Females.....	2	20	11	6	3	7	6	4	4	1	4	2	2	73
Public officials.....	Males.....	.....	1	1	1	1	.....	2	2	3	5	3	4	2	25
Sailors.....	Males.....	.....	1	.....	.....	.....	.....	1	2	1	2	2	2	1	12
Salesmen and saleswomen.....	Males.....	1	6	5	4	6	3	3	7	6	7	5	3	.....	58
Salesmen and saleswomen.....	Females.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	.....	.....	.....	3
Servants.....	Males.....	5	15	7	7	4	5	5	5	3	1	1	.....	1	59
Servants.....	Females.....	81	67	31	25	20	14	19	27	22	29	30	31	19	428
Shoemakers.....	Males.....	1	1	3	2	1	3	2	1	5	8	14	15	12	77
Steam railway employes.....	Males.....	3	20	27	23	19	15	13	17	19	19	22	7	9	224
Stenographers.....	Males.....	1	2	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Stenographers.....	Females.....	3	6	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
Stock dealers.....	Males.....	.....	2	2	2	1	2	2	7	5	3	1	4	2	33

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 and over	Un- known	Total. Males. Females.
Students.	Males Females	68 66	17 11	1 2		1													87 79
Tailors.	Males Females	1 1	2 3	3 6	6 1	1 1	2 5	4 5	4 2	2 4	5 6	5 6	6 6	6 2					54 2
Tanners and curriers.	Males									1				2	1				4
Teamsters.	Males	3	2	9	13	11	13	7	11	14	8	13	4	7	1				116
Telegraph and telephone operators.	Males Females	3 5	4 5	6 2	2 4	3 1	3 1	1 1	1	2					1				28 12
Tinners.	Males		1		2	2	3	2	5	3	2	1	5	7	3				36
Undertakers.	Males		1	1		2		2	4		2	1	1		1				15
Upholsterers.	Males		1			1				1			2		1				6
Veterinary surgeons.	Males									2	1	1	1						5
Volunteer soldiers and pensioners.	Males		5	2	2	1		1			6	6	7	12	3				45
Watchmakers and jewelers.	Males Females		1 1	3 1	3 1	2 2	2 3	2 3	1 1	2 1	2 1	3 3							25 1
Weavers.	Males Females								1						2				2 4
No occupation.	Males Females	143 269	85 210	91 209	54 144	62 186	59 145	75 153	76 203	98 232	147 285	185 408	240 432	279 496	308 668	62 132	11 3		1,975 4,182
Totals.	Males Females	526 545	670 659	671 722	593 623	632 663	696 591	705 623	870 744	941 744	1,103 905	1,319 1,167	1,370 1,204	1,399 1,172	1,359 1,301	201 215	21 14		13,086 11,892
Total, 15 years and over.																			24,978
Under 15 Sailor-births.																			9,502 2,099
Grand total.																			36,579

TABLE No. 8.

*Deaths from Tuberculosis, all Forms, with Rates per 100,000
Population, for Certain Occupations of Each
Sex, in Indiana, 1909.*

OCCUPATION.	Number of Deaths 15 Years of Age and Over.	Death Rates per 100,000.
MALES.		
1. Farmers.....	469	17.1
2. Laborers.....	399	14.6
3. No occupation.....	270	9.8
4. Clerks.....	47	1.7
5. Carpenters.....	45	1.6
6. Merchants.....	36	1.3
7. Factory hands.....	34	1.2
8. Painters and decorators.....	27	.9
9. Students.....	24	.8
10. Bartenders.....	23	.8
11. Steam railway employes.....	22	.8
12. Machinists.....	21	.7
13. Barbers.....	20	.7
14. Glass workers.....	20	.7
15. Moulders and ironworkers.....	17	.6
16. Engineers and firemen—railroad.....	16	.5
17. Salesmen.....	16	.5
18. Teamsters.....	16	.5
19. Bookkeepers.....	15	.5
20. Blacksmiths.....	14	.5
21. Printers and pressmen.....	13	.4
22. Servants.....	13	.4
23. Professors and teachers.....	12	.4
24. Agents.....	11	.4
25. Mipers.....	11	.4
26. Butchers.....	10	.3
27. Mail service.....	10	.3
28. Tailors.....	8	.2
29. Chemists and druggists.....	7	.2
30. Clergymen.....	7	.2
31. Electricians.....	7	.2
32. Firemen, city.....	7	.2
33. Telegraph and telephone operators.....	7	.2
34. Marble and stone cutters.....	6	.2
35. Masons.....	6	.2
36. Mechanics.....	6	.2
37. Shoemakers.....	6	.2
38. Volunteer soldiers and pensioners.....	6	.2
39. Builders and contractors.....	5	.1
40. Cigar makers.....	5	.1
41. Gardeners and florists.....	5	.1
42. Lawyers.....	5	.1
43. Musicians.....	5	.1
44. Oil workers.....	5	.1
45. Policemen.....	5	.1
46. Cooks.....	4	.1
47. Coopers.....	4	.1
48. Managers and superintendents.....	4	.1
49. Manufacturers.....	4	.1
50. Millers.....	4	.1

TABLE No. 8—Continued.

OCCUPATION.	Number of Deaths 15 Years of Age and Over.	Death Rates per 100,000.
51. Plasterers.....	4	.1
52. Stenographers.....	4	.1
53. Bakers and confectioners.....	3	.1
54. Cabinet makers.....	3	.1
55. Commercial travelers.....	3	.1
56. Electric railway employees.....	3	.1
57. Engineers and firemen—stationary.....	3	.1
58. Janitors.....	3	.1
59. Peddlers.....	3	.1
60. Plumbers.....	3	.1
61. Public officials.....	3	.1
62. Tanners.....	3	.1
63. Watchmakers and jewelers.....	3	.1
64. Bankers.....	2	.07
65. Brewers, distillers, etc.....	2	.07
66. Carriage and wagon makers.....	2	.07
67. Dairymen.....	2	.07
68. Harness makers and saddlers.....	2	.07
69. Hotel and boarding house keepers.....	2	.07
70. Hunters and fishermen.....	2	.07
71. Inspectors.....	2	.07
72. Launderers.....	2	.07
73. Liverymen.....	2	.07
74. Messengers.....	2	.07
75. Physicians.....	2	.07
76. Stock dealers.....	2	.07
77. Basket makers.....	1	.03
78. Cashiers.....	1	.03
79. Dentists.....	1	.03
80. Draftsmen.....	1	.03
81. Lumbermen.....	1	.03
82. Packers.....	1	.03
83. Photographers.....	1	.03
84. Sailors.....	1	.03
85. Undertakers.....	1	.03
86. Upholsterers.....	1	.03
FEMALES.		
1. Housewife.....	1,200	43.9
2. No occupation.....	673	24.6
3. Servants.....	103	3.7
4. Students.....	30	1.0
5. Professors and teachers.....	23	.8
6. Milliners and seamstresses.....	17	.6
7. Clerks.....	12	.4
8. Bookkeepers.....	7	.2
9. Factory hands.....	7	.2
10. Telegraph and telephone operators.....	6	.2
11. Musicians.....	3	.1
12. Nurses.....	3	.1
13. Stenographers.....	3	.1
14. Cooks.....	2	.07
15. Weavers.....	2	.07
16. Bakers and confectioners.....	1	.03
17. Chemists and druggists.....	1	.03
18. Hotel and boarding house keepers.....	1	.03
19. Janitresses.....	1	.03
20. Laundresses.....	1	.03
21. Saleswomen.....	1	.03
22. Watchmakers and jewelers.....	1	.03
Total males.....	1,836	67.1
Total females.....	2,098	76.7
Total all occupations.....	3,934	143.9

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